JULY, 1960

AMATEUR RADIO

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WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI: Sundays, 1100 hours EST, simultaneously on 3575 Kc., 7146 Kc., and 146.0 Mc. Intrastate call-backs taken on 7050 Kc.,

VK3WI: Sundays, 1030 hours EST, simultaneously on 3573 and 7146 Kc., 51.016 and 146.25 Mc. Intrastate hook-ups taken on 7135 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI: Sundays, 0900 hours EST, simultaneously on 7146 Kc. and 14.342 Mc. Intrastate hook-ups taken on 7105 Kc.

VK5WI: Sundays, 0900 hours CAT, on 7146 Kc. Intrastate hook-ups taken on 7125 Kc. Frequency checks given when VK5WI is on the air and also by VK5MD by arrangement.

VK6WI: Sundays at 0830 hours WAST, on 7145 Kc. Intrastate hook-ups taken on 7085 Kc.

VK7WI: Sundays at 1000 hours EST, on 7146 Kc. and 3672 Kc. Intrastate hook-ups taken on 7115 Kc.

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EDITORIAL

★

THE AMATEUR ASPECT

Two years ago Austin Forsyth, G6FO, Editor of British publication "The Short Wave Magazine", wrote an editorial under the heading of "Justification" which today, means even more than it did at the time it was written, for it sums up a situation existing in this country as well as in many others. Mr. Forsyth says:

"Proceeding from the basic assumption that the ether is free for all to use subject to reasonable safeguards reached by mutual agreement —a principle which needs constantly re-emphasising—we should now look at the conditions under which Amateurs are at present operating. Briefly, on virtually all bands except ten metres, they are 'working in the cracks'. That is to say, our rightful allocations are being trespassed upon by illegal commercial stations, to say nothing of noises emanating apparently from idling jammer transmitters. Though these encroachments have been increasing steadily and the whole situation gets progressively worse, it is nevertheless being met in the sense that more and more Amateurs are coming on the air and a great deal of DX is being worked, world-wide, on both c.w. and phone.

"What this means is that Amateurs are quite capable of working under shared-band conditions, if they must. But it also implies that a shared band means sharing—in other words, commercials have no ground for complaint if they are being interfered with by Amateurs. Nor does it necessarily follow, if a complaint is made, that in all circumstances a commercial station's operations are more important than the Amateurs'. It could be shown that a great many commercials waste ether space and spend many hours transmitting merely to 'hold the channel'. In any case, the apparent threat of Amateur interference on a shared band is more imaginary than real; the commercials competing with us (on our bands) are always much higher-powered and practically never use their own frequencies for reception.

"In the same way that Amateurs—as a body, the most experienced, capable and progressive communicators in the world—have long since ceased to expect their own frequencies to be clear of interference by other Amateur stations, so the commercial use of the spectrum as a whole must be worked out, geographically and in time, to allow one channel to serve as many interests and services as possible.

"The present level of Amateur activity, with the high state of development of the art of Amateur Radio, has become its own justification for a proper share of the ether. This is not a matter of 'privilege,' or even a 'right' (in the moral sense), but simply a requirement by virtue of sheer weight of numbers! Moreover, since radio amateurs are primarily concerned with and interested in Communication, they must have frequency areas available which are capable of carrying their DX traffic —that is to say, any suggestion that Amateurs can be compensated for h.f. bands lost by further allocations in the deserts of the UHM or SHF is completely unacceptable."

FEDERAL EXECUTIVE.

THE CONTENTS

Two Tubes and Crystal Control on 288 Mc.

RICHARD J. HEIGHWAY,* VK3ABK/T

AT a recent Zone Convention considerable interest was shown in a two-tube crystal controlled transmitter for the 288 Mc. band. As others may care to try this simple and inexpensive method of producing a low-power signal for portable or mobile use, the transmitter is described below.

The circuit (Fig. 1) uses a 6J6 third overtone oscillator and quadrupler, followed by a 6J6 push-pull tripler as the modulated stage.

Overtone oscillators and modulated tripler stages will no doubt be frowned upon by some, but with reasonable care, and a generous voltage supply they both work well in portable equipment.

The oscillator uses a capacitive voltage divider feedback system which is easily adjusted, by means of a variable capacitor, providing a convenient feedback control.

A crystal in the appropriate 8 Mc. range is used here, although others, in particular those especially cut for higher overtone frequencies, could be used with a suitable change in the multiplication factor in the first 6J6.

The anode circuit of the oscillator is resonated at 24 Mc. by means of a slugged coil, and is capacitively coupled to the second half of the tube tuned as a quadrupler, giving output on 96 Mc.

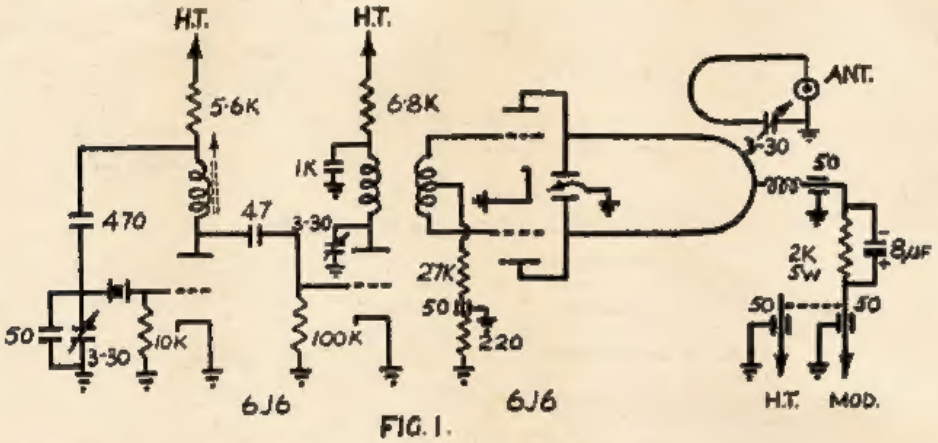
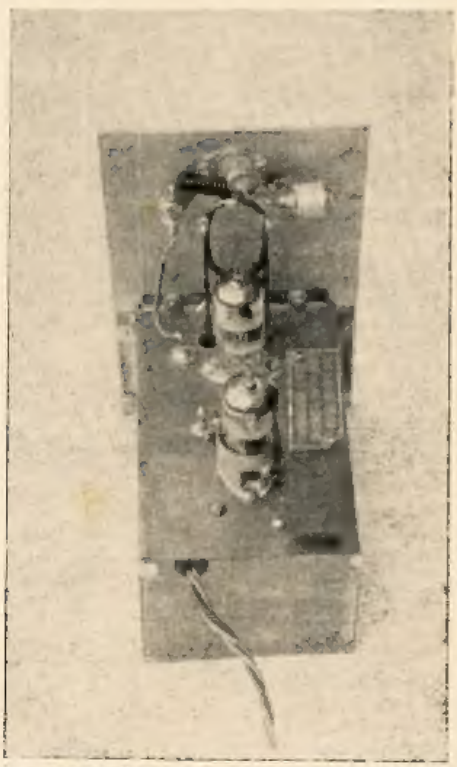


FIG. 1.



The Transmitter from above showing details of the anode inductance and antenna coupling.

The output of this stage is fairly closely coupled to the grid circuit of the second 6J6, and provides 1.5 mA. grid current through the 27K ohm grid resistor. The output circuit of the 6J6 consists of a loop of 14 gauge wire which passes from the anode pin lugs of the 6J6 socket, vertically through holes in the chassis and is anchored by a rigid choke made from 18 gauge enamelled copper, soldered to a ceramic bypass capacitor clamped to the front panel.

The anode tuning is adjusted by means of a butterfly capacitor cut from 0.010" brass; the fixed plates are soldered to the 6J6 anode pin connections, and the rotor is mounted on a cut-down potentiometer shaft and bearing, fixed to the front panel.

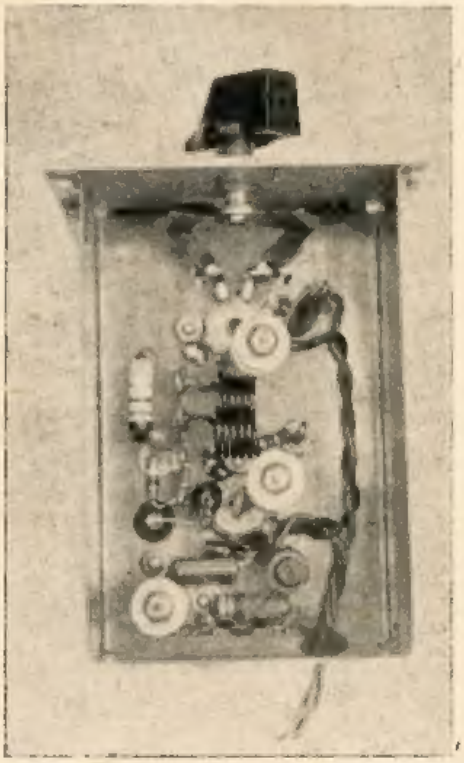
Provision is made either to supply direct high tension to the tripler when it is used as a driver for a QQE06/40 via a QQE02/5, or to supply modulated high tension from a 12AT7/5763 144 Mc. portable transmitter, simply by removing the tubes and pushing a wire into pin 1 connection of the 5763 socket.

A coupling loop and a series trimmer capacitor are supported by the antenna socket on the front panel.

When connected to a 280-300 volt high tension supply, the transmitter draws 40 mA., of which the tripler stage accounts for 22 mA. In the unit described, about 1 watt can be dissipated in a 6 volt 400 mA. lamp load, but depending upon individual regard for the welfare of the tube, the resistor in the anode supply can be changed. This resistor is bypassed for audio to prevent reduction in modulation depth.

The transmitter, built on a 4½" x 2¾" chassis with a 5½" high front panel is as easy to construct and far more reliable than the unstable modulated oscillator devices which have been used in the past. Although the output may be lower, it is more efficient and effective, since the energy is radiated in a normal communication bandwidth of say 10 kc. instead of a wasteful 2 Mc. or more.

With the unit described, contacts both local and inter-city from fixed and portable locations have been made, and as a mobile transmitter, the small size, low power drain and stability make it worth consideration.



This underneath view shows the parts layout and mechanical details.

* 22 Leonard St., Belmont, Geelong, Vic.

TWENTY-ONE YEARS AGO

From page 25 of "Australasian Radio World," 10th June, 1939:—

"Ultra high Frequency Section, Inaugural Meeting of N.S.W. Division, W.I.A.

"First meeting of the newly formed U.h.f. Section of the W.I.A., N.S.W. Division, was held at the Y.M.C.A., Pitt St., Sydney, on the evening of 1st June, 1939. At a recent Council meeting of the Division, Mr. Don B. Knock (VK2NO) was asked to accept the presidency of the proposed U.h.f. Section and the chair was taken by him on this evening.

"Attendance numbered twenty-two including licensed Amateurs and listeners . . ."

Watch "A.R." next issue for an article on the V.h.f. and T.v. Group of the N.S.W. Division.

A Turret Tuner Receiver Front-End

BRUCE HOLLAND,* VK2ZAD

HAVE you ever wished to own a receiver which would tune all bands, from 80 metres through to 6 or 5 metres, having good bandspread in the Amateur bands and also giving general coverage from 1 to 55 Mc., one which is not too difficult or too expensive to build? If so this article will appeal to you.

I must confess that this design is not original or that I had anything to do with the development of it, but as most of you will gather from my address I am a parson, and as they say that I only work one day a week, the task has fallen on me. Acknowledgment goes to Jack VK2ADT, Reg VK2ATS, Sid VK2APS and Keith VK2ZER who have all built this tuner before me and helped me in its development. I must say at the start that this is not a step by step constructional article, but a general outline of the design to help anyone who wishes to build one of these tuners.

The tuner consists of a three-stage front-end designed to work into a first intermediate frequency of approximately 3 Mc. The r.f. tuned circuits are mounted on rails of insulating material (perspex, canvas bakelite, etc.), 6" long by ½" wide by 3/16" or ¼" thick (do not use lighter materials as they bend and so give erratic contact). Through these rails are fixed a number of screws (11) to which the coils and trimmers are mounted.

The rails in turn are mounted on two hexagon disks about 3" across flats (see Fig. 2) which are secured by means of a potentiometer bearing sweated to ¼" diameter shaft 6" apart; in between are fixed two hexagon baffle plates spaced at 2" and 4" from one of the disks.

A number of spring contacts are mounted on an insulated strip which is fastened to the chassis of the unit in such a way that they (the contacts) connect to the active coils. The contacts should also be arranged in such a way so that there is a minimum of connecting lead to the tuning gang and valve sockets, etc.

The electrical circuit, which is given in Fig. 1, is straightforward and consists of a 6AK5 pentode r.f. amplifier, a 6AK5 pentode mixer, and a 9001 pentode oscillator, operating from a 100 volt supply. The circuits are tuned with an ordinary three-gang b.c. condenser from which every second plate in the rotor and stator is removed, giving a capacity of approximately 100 pF. per section. For bandspreading, a 20 pF. mica condenser is connected in series with each gang section, while general coverage is obtained by shorting out the series condensers with a leaf type switch mounted on the gang.

The oscillator is set on the high side for 80, 40 and 20 metres and on the low frequency side on the other bands, the oscillator coils are all wound on formers except the 5 and 6 metre coils which are self-supporting. The r.f. amp. and mixer coils are only former-wound on 20, 40 and 80 metres.

* The Vicarage, Railway St., Delungra, N.S.W.

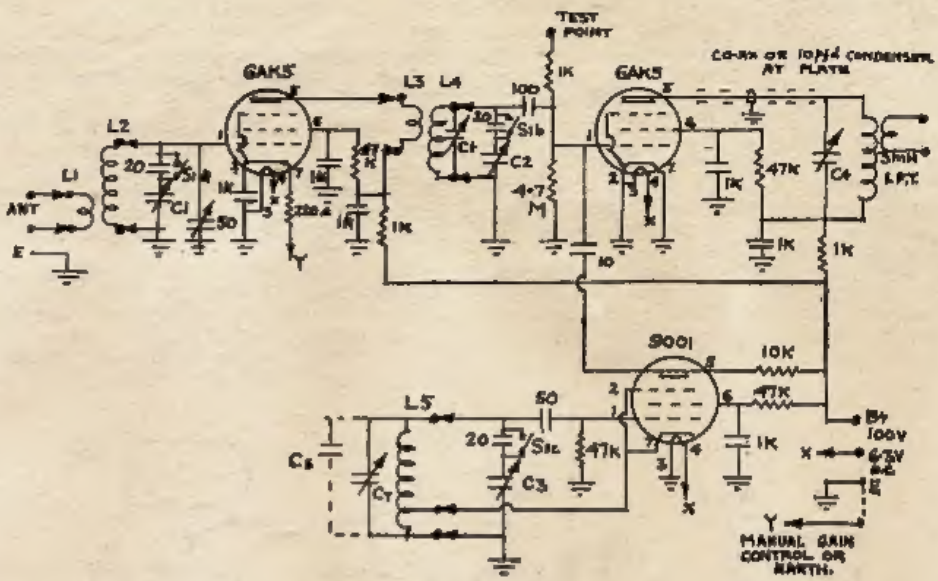


Fig. 1.—Circuit Diagram of Front-End.

Band	R.F. Amplifier	Mixer	Oscillator
5 mx	Prim.: 3 turns ¼" dia., bellwire, between 1st and 2nd turns of secondary winding. Sec.: 4 turns 16g. ¼" dia., 1" long.	Prim.: 4 turns ¼" dia. bellwire. Sec.: Same as r.f. coil.	5 turns 16g. ¼" dia., spaced 1". Tap 1¼ turns from earth end.
6 mx	Prim.: same as 5 mx coil. Sec.: 5 turns 16g. ¼" dia., 1" long.	Prim.: Same as 5 mx coil. Sec.: Same as r.f. coil.	6 turns 16g. ¼" dia., spaced 1". Tap 1¼ turns from earth end.
10 mx	Prim.: 3 turns bellwire, ¼" dia., at bottom of secondary. Sec.: 9 turns ¼" dia. 18g. E., spaced 1".	Prim.: 4 turns bellwire, ¼" dia., at bottom of secondary. Sec.: Same as r.f. coil.	9 turns ⅜" dia., ¼" long on former. Tap 3 turns. Shunt cap.: 35 pF.
15 mx	Prim.: 4 turns bellwire, ⅜" dia. interwound with sec. Sec.: 12 turns 18g. E. ⅜" dia., 1½" long.	Prim.: 5 turns bellwire, ⅜" dia., interwound with sec. Sec.: Same as r.f. coil.	11 turns 18g. E. ⅜" dia., 1" long. Tap 3 turns. Shunt cap.: 30 pF.
20 mx	Prim.: 11 turns 36g. E. over secondary. Sec.: 36 turns 20g. E. ⅜" dia., former close wound (c.w.).	Prim.: 16 turns 36g. E., over secondary. Sec.: Same as r.f. coil.	30 turns 20g. E. ⅜" dia., close wound. Tap at 10 turns.
40 mx	Prim.: 11 turns 36g. E. over secondary. Sec.: 30 turns 36g. E. c.w., 7/16" dia., slug tuned.	Prim.: 18 turns 36g. E., over secondary. Sec.: Same as r.f. coil.	30 turns 36g. E., c.w., 7/16" dia. former, no slug. Tap at 10 turns.
80 mx	Prim.: 25 turns 36g. E. over secondary. Sec.: 75 turns 36g. E. c.w., ¾" dia.	Prim.: 35 turns 36g. E., over secondary. Sec.: 75 turns 36g. E. c.w., ¾" dia.	42 turns 36g. E., c.w., ¾" dia. former. Tap at 13 turns.

Fig. 3.—Coil Data.

Note.—All coils below double lines are wound on formers.

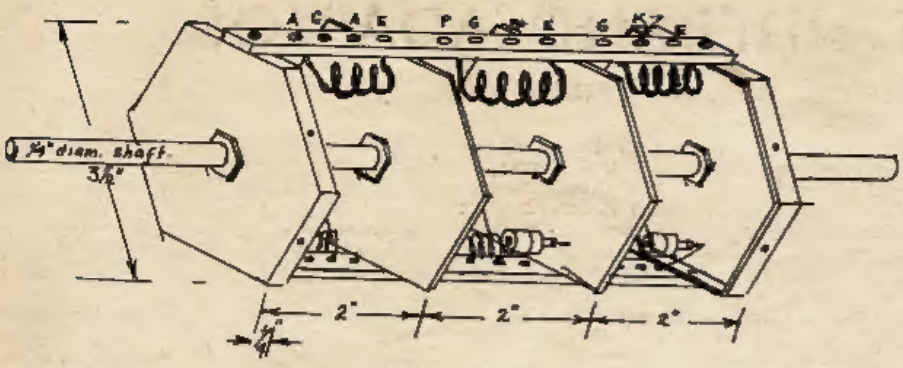


Fig. 2.—Dimensions of Turret.

The r.f. amplifier grid circuit is tuned by a 50 pF. variable condenser on the front panel, while the other stages are tuned by trimmers fixed on the rails and on some bands it is necessary to add fixed capacity in parallel with the trimmer as well as the oscillator circuit to give the required bandspread. The cathode of the r.f. amplifier can be connected to ground at the point "Y" or to an r.f. manual gain control.

The coil data is shown in Fig. 3, but as slight variations in layout and changes in i.f. frequencies affect it, it is only approximate and serves as a guide. With careful construction it is possible to operate this type of turret up to 100 Mc. Fig. 4 shows an under chassis view with the turret removed to show the contacts, etc.

Fig. 5 gives an example of a star-wheel construction for locking the turret in place; it is possible to use the clicker plate of a twelve position switch for this purpose.

SOME CONSTRUCTIONAL HINTS

It is good practice to add an earthing wiper contact to bear on the side of the turret disk. In cases of instability in the r.f. stage, try increasing the aerial coupling by adding turns and the earthing of the baffle between the r.f. and mixer sections.

Make sure you mount the trimmers on the side of the coil to which you can get easy access. It is also advisable to keep the wiping contact straight and adjust the moving contact to bear firmly against them. The wiping contact should be made out of springy material, contact leaves out of relays are excellent for this purpose.

An alternative method of band-spreading is to mount additional trimmers on the rail and use them in series with the gang instead of the 20 pF. It will be necessary to add an extra contact to the rail if using this method, which gives adjustable bandspread.

To give some idea of the coverage of the tuner, my receiver range is:—

Band Metres	Bandspread Mc.	General Coverage Mc.
80	3.35- 4.75	0.9 - 3.4
40	6.9 - 7.6	4.5 - 7.0
20	13.6 - 16.0	7.5 - 14.0
15	20.5 - 22.0	15.5 - 20.75
10	28.0 - 30.0	22.0 - 28.5
6	49.0 - 55.0	32.0 - 51.0

It should be possible to make an eight-sided turret and so cover a greater frequency range.

Now I suppose you will be rushing to the shack to construct a turret for your own use.

[In a mechanical construction job such as this, a few points need to be watched.

Make sure that the ¼" shaft selected is perfectly straight.

Carefully lay out one end plate, using engineer's dividers, and then use it as a template to make the others, drilling all holes together.

To keep the contact strips identical, it is a good idea to make a steel template from a scrap of steel strip, drilled for the contacts, and then place all the insulated strips in a vice and drill them at once.

Care in construction will pay dividends in smooth operation of the turret. —Editor.]

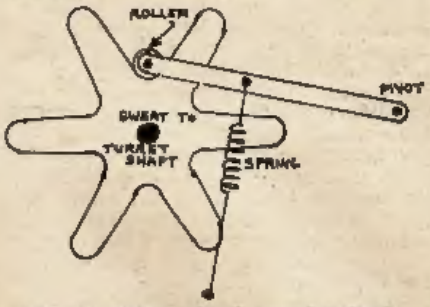


Fig. 5.—Star wheel construction.

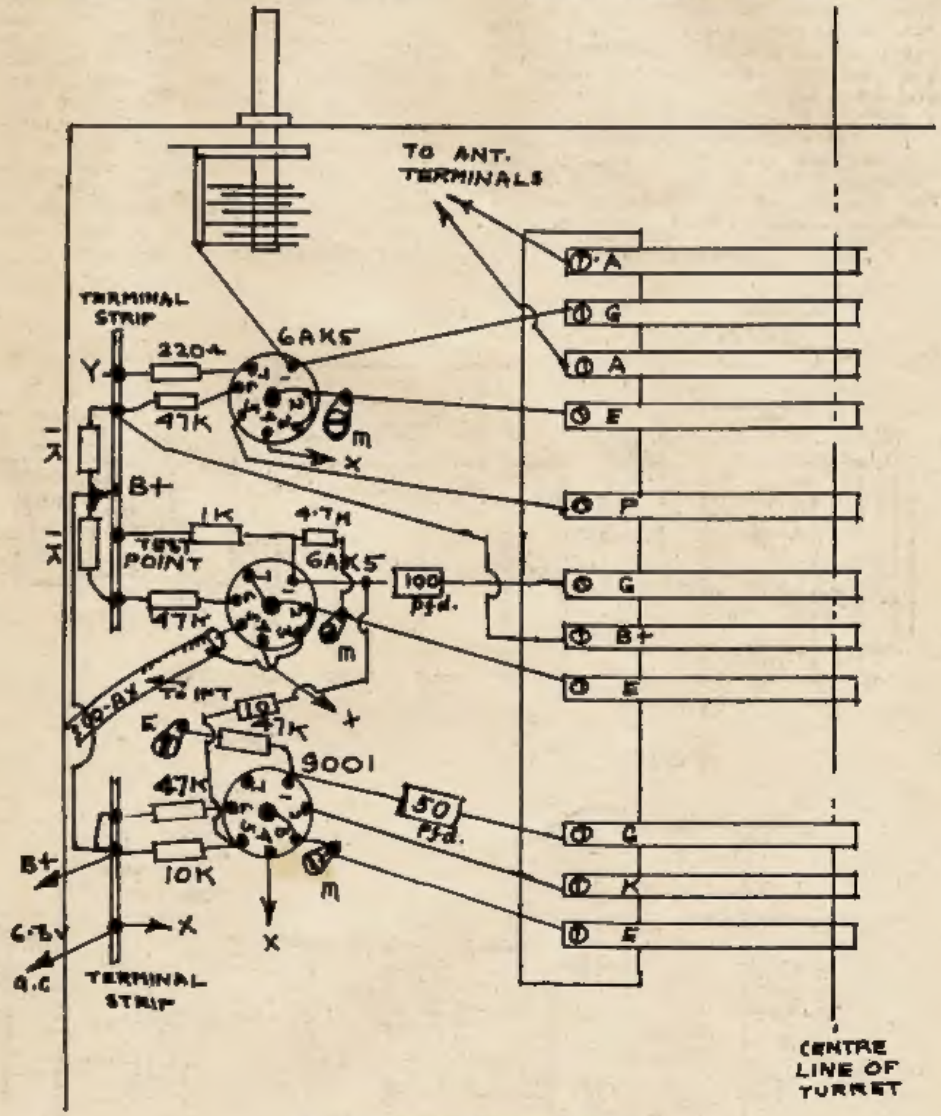


Fig. 4.—Under-Chassis View.

Contacts.—Relay contacts or similar material.
Screws extended on grid contacts through chassis to join 20 pF. condensers and leaf-type switch.
1K ceramic by-passes not shown for clarity.

A SINGLE SIDEBAND ADAPTOR

STAN BOURKE,* VK2EL

HAVE you ever wished for a way to try s.s.b. with your present transmitter? Here is a simple adaptor you can attach to your a.m. or c.w. rig till you "get your feet wet". Later, when you become "sold" on sideband, you can use these parts as the basis of your new s.s.b. transmitter. Interested? Let's look at Fig. 1.

V1 and V2 are quite ordinary audio amplifiers, having plenty of gain for the usual crystal microphone and favouring the speech frequencies. V2B is coupled through transformer T1 to a mysterious thing called an audio phase shift network. If you are already using a speech amplifier with a 600 ohm line to your modulator, just substitute this for V1, V2 and T1.

The audio phase shift network is a group of carefully selected components which divide your audio into two signals 90 degrees apart in phase. You can purchase this as a ready made unit[1] but you may knock up your own, if you have access to a good bridge and a stock of high-stability parts.[2]

The two audio signals emerging from the network are further amplified by V3A and V3B and then applied to T2 and T3. T1, T2 and T3 are step-down audio transformers having a turns ratio of around 6:1 (not critical). Most disposals receivers have output transformers with 600 ohm secondaries (Commands, etc.). You may modify ordinary speaker transformers by removing the voice coil winding and substituting a couple of layers of fine wire. Note that T2 and T3 should be as nearly identical as possible. Specially designed transformers are also available locally.[3]

In the bottom section of Fig. 1 we have a simple r.f. network, which is linked to the driver stage of your present transmitter. This network divides the r.f. signal in the same way so that we again have two parts separated 90 degrees in phase (refer Fig. 2; use values as close as possible to those marked).

The next section of the circuit may look a little unusual. We call these balanced modulators and I'm going to ask you to take my word for the fact that they do operate. P3 and P4 are adjusted to balance out the carrier and, provided that we have achieved amplitude balance and 90 degree shift in the r.f. and audio voltages, the result will be an s.s.b. signal. If this statement causes you sleepless nights, please write to the author for a more confusing explanation!

Since the balanced modulators are connected in push-pull fashion, we have a balanced or bifilar circuit in their output, linked to the grid circuit of a straight r.f. amplifier stage, V4. This will be used to drive your existing final stage, which we will now use as a linear amplifier.

Note that the two "CX" condensers must be changed from band to band (Fig. 2) and that L1 and L2 will need to be changed or switched, if you want to use s.s.b. on more than one band. I haven't included coil data—have you noticed it never seems right?

To connect the adaptor to your transmitter, you will need to break the circuit between the driver and final stage grid and link couple the driver's output to J1 on the adaptor. The output of the adaptor is then coupled to your final amplifier grid circuit. To return to normal operation, use a short piece of co-ax with a plug at either end, to reconnect the drive to the p.a.

The subject of linear amplifiers is a long one, but there are a couple of ways you may adapt your p.a. with very little circuit alteration.

For class AB1 operation apply enough fixed negative bias to limit your "no signal" plate current to about half your rated plate dissipation, stabilise your

* 17 Clisdell Ave., Canterbury, N.S.W.

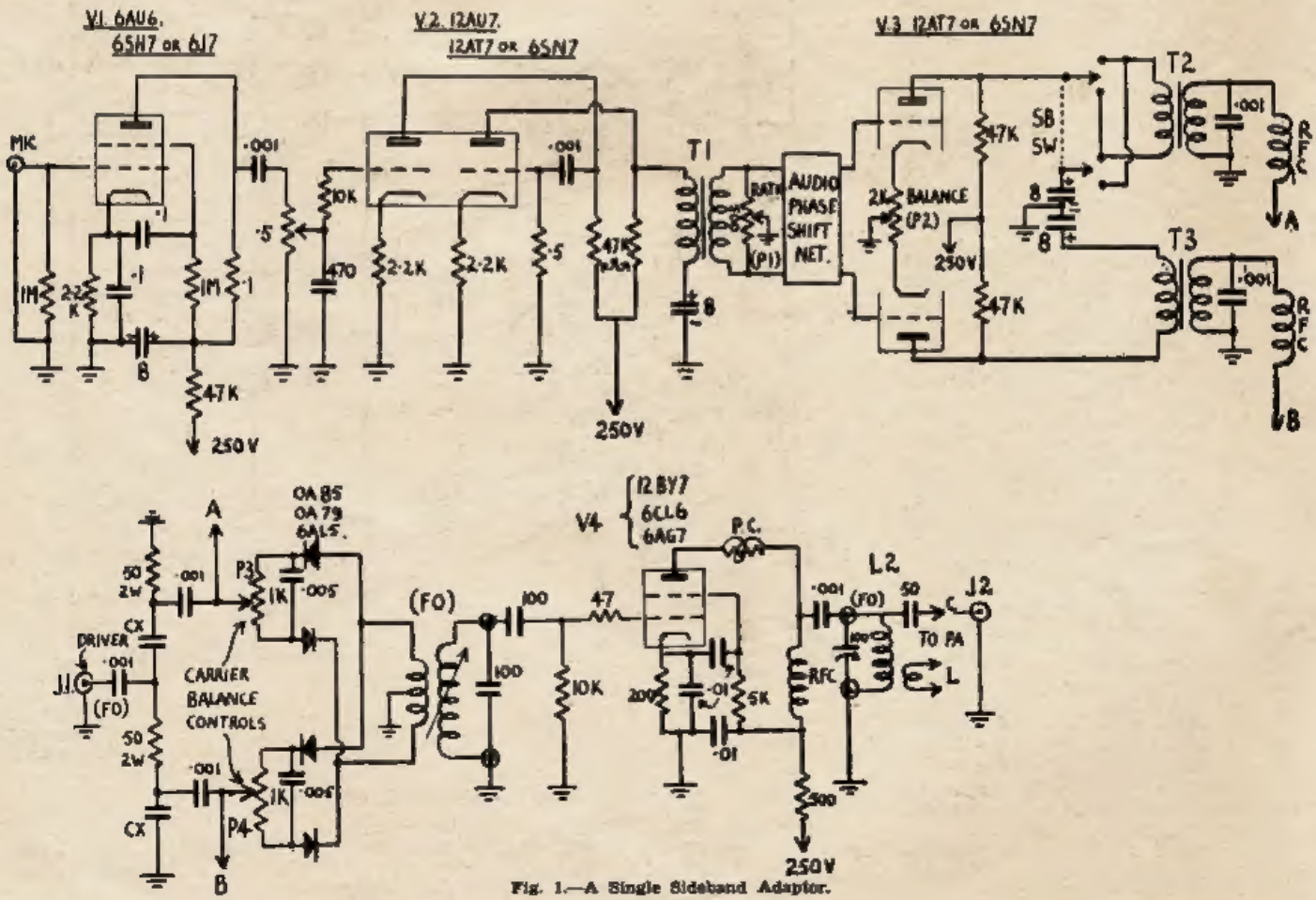


Fig. 1.—A Single Sideband Adaptor.

screen voltage and limit your drive to the region of zero grid current.

If you are now using a clamp tube with a pentode or tetrode final, you already have a "ZL linear" amplifier without alteration.[4]

There are so many different types of transmitters in use that I will have to leave some of the design to you, but I will outline the set-up for a typical transmitter using the popular Geloso v.f.o. driving one or two 807s or 6146s, as an example.

First, turn off your a.m. modulator and plug your microphone into the adaptor. Connect a short piece of co-ax to J1 and terminate it in a small link wound around the appropriate output coil in the v.f.o. Connect J2 to your final amp. grid circuit—use "C" if you don't have a tuned circuit there and "L" if you are using link coupling. Apply the fixed bias, if you have settled for AB1 operation. For 807s, the bias value will be close to one tenth of your screen voltage—30 volts for 300, etc. For the 6146 the value will be near 45 volts. If you are using the clamp tube ZL linear circuit, check to see that the clamp tube is operating properly.

Band	Value for "CX" (two required)
80 metres	850 pF.
40 metres	450 pF.
20 metres	220 pF.
15 metres	150 pF.
10 metres	110 pF.

Fig. 2.

Tune L1 and L2 to resonance and you should have drive. If all is well you should find points near the centre of P3 and P4 where the drive (carrier) goes way down. Refer to the January 1960 issue of "A.R." and proceed to align your adaptor. (Leave out adjustments for L1 and L2.)

I don't propose to say much about the layout of the unit—you will probably want to match the size of your transmitter, or adapt it to the available space. Try to avoid any chance of power going from the driver to the p.a. direct whilst you are using the adaptor. Take a little care with the layout of V4—it's a very high gain stage and we must get it and the final amp. absolutely stable. It seems like a good idea to enclose the adaptor in some kind of screening or shielding to keep it away from the field of the final amplifier.

The most troublesome problem you are likely to meet will be the v.f.o. stability, especially at 14 megs. and higher and the fact that you have to turn off the v.f.o. whilst listening. A more complete exciter, with features which overcome most of the limitations of this simple adaptor will appear in "A.R." in the near future.

NOTES

1 D. Pollard, 17 Clisdell Ave., Canterbury, N.S.W.
2 Articles by N. Southwell, VK2ZF, in past issues of "A.R."
3 U.R.D., 175 Phillip St., Sydney. (Type AN54).
4 "Simple Sideband," L. A. Earnshaw, 2L-1AAX, "A.R." July '59, page 9.

A CHEAP 100 Kc. CALIBRATOR

R. L. BRENTWOOD,* VK3OP

FOR some time at this station the need of an accurate frequency standard has been felt. However, 100 kc. crystals are expensive and hard to come by, so after some enquiries it was decided to use an accurate 1 Mc. crystal oscillator with a multivibrator circuit, to divide down to 100 kc. The scheme was completely successful, and as it is not described in the A.R.R.L. Handbook, and many Amateurs know very little of such circuits, the following information is passed along for what it is worth.

The system used here consists of the pentode section of a 6U8 as a crystal oscillator, which can be varied a few cycles either side of 1 Mc. by a 50 pF. trimmer. The signal from the oscillator is fed to one grid of a 12AU7 in a simple multivibrator circuit. The output frequency of this is determined by a 50K potentiometer. As no data was available as to component values in the multivibrator, an experimental model was first built up and all values arrived at by cut and try methods. The circuit is not critical, and once adjusted will continue to work perfectly.

The layout is not important, as long as there is reasonable mechanical stability. Other valves have worked well, including a 6AU6 or a 6C4 triode in the oscillator, and a 6SN7 in the multivibrator position.

Altering the loading of the multivibrator will affect its operation, so it was found desirable to use the triode section of the 6U8 as an isolating stage. This may be omitted, but it is not advisable unless you want to be continually resetting the potentiometer. It was also found convenient to have a switch to remove h.t. from the multivibrator, so there is a choice of 1 Mc. and 100 kc. check points.

A method of aligning the unit is as follows. First check that the 1 Mc. oscillator is working and on frequency. Then tune the transmitter v.f.o. or frequency meter to some multiple of 100 kc., but not of 1 Mc. (e.g. 3,600 kc.). Also tune a receiver to this frequency so the carrier is heard (without the b.f.o. on). Then with the crystal oscillator and multivibrator operating, slowly turn the 50K potentiometer, ignoring the "birdies", until a strong steady beat note is heard in the receiver. (This should not alter frequency when the receiver is detuned slightly.)

As a check, shift the v.f.o. and receiver by 100 kc., and a similar beat should be heard. If not, repeat the procedure on a different frequency, until a beat is heard at every 100 kc. interval.

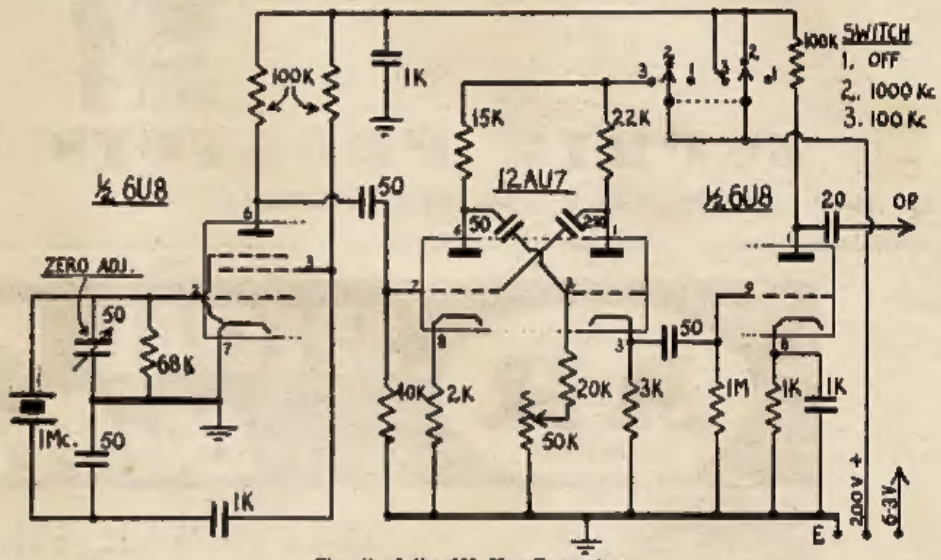
As a final adjustment, zero-beat the crystal oscillator with WWV by altering the trimmer. It may be found that when the multivibrator is switched off the oscillator changes frequency very slightly, but this does not matter as the 1 Mc. check points need only be used for rough calibration, and then the multivibrator may be switched in for final adjustment.

As the use of crystal calibrators is well covered in the Handbook and elsewhere, no discussion of that will be entered into here. The unit described has been in operation for some weeks and no trouble has been encountered.

Power (6.3 volts at 0.75 amps., and about 200v. at 8 mA.) can be taken from a receiver, or alternatively the calibrator can be built into the receiver itself. A voltage regulator tube can be included but was not found necessary here.

The multivibrator produces usable harmonics up to 50 Mc. or more, so no additional harmonic generator is necessary; and if desired a further multivibrator could be added to produce signals every 100 kc. for extreme accuracy.

Finally, the unit needs a warm-up time of less than one minute for normal applications.



Circuit of the 100 Kc. Generator.
All resistor values are in Ohms, and all capacitors in pF.

* 23 High St., Mont Albert, E.10, Vic.

"AMATEUR RADIO" MAGAZINE

"AMATEUR RADIO", the official journal of the W.I.A., is published by the VK3 Division who have delegated the work to an honorary Publications Committee. It is your magazine and so you have to contribute the articles which appear. This article is published so that you may appreciate the work entailed in printing "A.R." each month, and also so that your articles can be presented in such a manner that facilitates their publication.

All correspondence should be addressed to The Editor "A.R.," P.O. Box 36, East Melbourne, C.2, Victoria. This correspondence is studied by the Publications Committee who meet on the second Monday of the month. After this meeting all technical correspondence is acknowledged by the Secretary and other staff read the articles, and where required prepare drawings for publication. Some time may elapse before the article is published, due to space requirements for different items.

It is of great assistance if the articles are typed, with **double spacing between lines.** For preference use a paper size of 8" wide by 5½" deep (half quarto). A **one inch margin** should be left all around the page. If you cannot type, then ruled paper could be used, but again please leave alternate lines blank and have the one inch margin all around. These requests help editing, proof reading, and above all make the printer's job far easier. Write on one side only, number each sheet and put your name and the title on each sheet as well.

"A.R." welcomes articles whether they be long or short, technical or personal, because we wish to make the magazine reflect your requirements. So do not hesitate to write, because unless we are told of Amateur activities, in turn, we cannot publish details. If your letter deals with an established column, e.g. V.h.f., S.w.l., DX, etc., then please write direct to the appropriate sub-editor.

Photographs of people, the rig, events, or of constructed apparatus are particularly requested and should preferably be glossy prints with good contrast. If they are large in size, so much the better, for this enables reduction in size when printed. All photographs will be returned if requested, so do not think you will lose a valuable print.

Sketches and circuit diagrams should be drawn on separate sheets of stiff white paper or tracing paper in Indian ink with the figure number, title and your name on the top. If you have draughting knowledge, or can get it done by a friend, this helps immensely.

The width is the important measurement. If the drawing will occupy one column in width, make your drawing 4½" wide, as it will be reduced in production to half size. Two and three column drawings should be 9½" and 14" wide respectively.

All lettering should be 3/16" high so that when the drawing is reduced the lettering is still readable, and keep said lettering within the confines of the drawing. Make all lines heavy to help reproduction.

However, if you cannot use Indian ink, then submit a clear **legible** layout which we can redraw before printing. It must be remembered that if work has to be done upon articles before they can be published, then further delays are incurred. So if you desire to see your article published in an early issue, please help by following the above suggestions.

As a guide to the amount of space your article will occupy, it is mentioned that four pages (size 8" x 5½") of typed double spaced copy, with one inch margins all around, will fill approximately a full column printed in eight point type. If the smaller six point type is used, six and a half pages of copy will be needed to occupy a full column.

The Publications Committee asks all Amateurs to forward articles for publication, as the Australian Amateur is equally progressive as his overseas counterparts, but unless he publishes details of his work, there could be the impression that he does very little. The article you write need not be a long learned treatise because the smaller article is equally acceptable, and in fact is always required to fill in those spaces which appear in any magazine layout.

Many hours of work are required each month to ensure your magazine is ready upon time and despatched direct to you. However, instances do occur where the magazine does not arrive. This can be caused by a variety of reasons, but in every instance it is a wise precaution to check with your Division to see that the correct mailing instructions have been forwarded to "A.R." The Distribution Manager cannot alter any mailing address unless he receives advice from the Division concerned. So always check that your card has the correct details shown upon it, and if it hasn't then request your Division to amend it accordingly. Then you can blame "A.R." or the postman if you don't receive your magazine.

Publishing the magazine is a task which has its rewards, but it is always of great assistance when the readers comment. This comment can be directed towards an article, an omission, or a suggestion for improvement; irrespective of what the comment is, it will be dealt with on its merits. So why not write today and comment, but remember that no publisher will print the text of unsigned letters.

The correspondence column, has during the past three months, carried some controversial subjects which, in turn, have aroused much comment. This is a good thing because people like having a "shot" at their fellow humans, and generally anything which makes people think achieves some end result. So if you have ideas, why not write to "A.R." because by so doing it gives every Amateur a chance to reply.

Remember that "A.R." is your magazine, and its success depends upon your co-operation. By co-operating, you help everyone, and this in turn helps the W.I.A. An active Institute, coupled with a good magazine, reflects the progress that Australia is making today.

We look forward to reading YOUR article in a future issue of "A.R."

FEEDBACK

A child's world is a wonderous thing wherein everything is fixed, and the possibility of change or alteration is beyond the realm of comprehension. It is a delightful period of time which we gradually lose as we grow older because adults realise that tomorrow will differ from today in so far as it may be better, or it may be less pleasant.

It occurs to me that the Australian Amateurs are living in a child's world. You may disagree, but how often have you heard your fellow Amateur talking as though things were permanent. A typical example is the last I.T.U. Conference. Because we did not suffer such severe frequency cuts as were expected, many Amateurs are now sitting back to enjoy their future. **What future?** The sole reason Amateurs did not lose more frequency allocations was the fact a major alteration to all frequency users was too complicated a task for this Conference. However, my opinion is that every frequency user commenced yesterday to prepare his own case for the forthcoming Conference. So that unless we now commence planning along the same lines, at the next I.T.U. Conference the world's Amateurs will be hard pressed to retain any frequency allocations.

A pessimistic view perhaps, but it is an adult approach, and not the thinking of children. **If you wish to continue operating as an Amateur Radio Station in the future**, then **you must commence planning that future today!** This is not conjecture, for the shadow of past I.T.U. Conferences points ominous fingers to the future trends and the need for frequency allocations to non-Amateur services.

Your reaction could well be "so what can I do?" To which there is a positive answer. **It is your problem**, for you must see that your Division commences **today** to think about the matter and forms a plan for presentation to Federal Executive. In turn they must consolidate all plans and prepare a master plan. Under no circumstances must we permit the past efforts made on our behalf by John Moyle to become solely historical. Nor must we forget that John Moyle acted upon a plan prepared by Federal Executive of the W.I.A.

The past history of many peoples proves that decadence follows complacency, and that resting upon past efforts leads to stagnation. Every Amateur must **today** ensure that our plan has commenced and from then onwards follow up to see that it is an active progressive idea. Tomorrow is too late, for by then we could well find that we no longer possess any frequency allocated to Amateur Services. **Act today!**

Until the Australian Amateur has established his permanent rights to specific frequency allocations he should adopt the motto of the three P's—

PROGRESS
PUBLIC RELATIONS
PUBLICITY

and from then onwards double his efforts towards more progress

73,
CASEY.

THE G4ZU "BIRD CAGE" AERIAL*

DICK BIRD, G4ZU

THIS project started in 1957, the object being to discover some simple structure which would give a power gain of up to 10 db. in the 20 metre and possibly the 40 metre bands.

A five-element wide-spaced Yagi can provide such a performance, but requires a boom length of at least 57 ft. on 20 metres and over 110 ft. on 40 metres. In the hope of achieving a reduction in physical size, tests were conducted with inductively loaded elements, but when an attempt was made to use more than three elements the gain did not increase according to the book. It was found that even the best loading-coils have an effective r.f. resistance of at least 20 ohms.

Although the feed impedance of a loaded beam may seem to be around 45 ohms, and although the measured s.w.r. with a 52 ohm feeder appears satisfactory, the unpleasant truth is really as follows.

Fig. 1—Half wave dipole with bi-directional pattern.

Fig. 2-A V-dipole provides an increase in gain in one direction.

The 45 ohm impedance at the feed point is made up of two components, the 20 ohm loss resistance in the coils plus the 25 ohm radiation resistance of the beam itself. In other words, only half the transmitter power is radiated The rest goes to waste in the form of heat. These figures refer to measurements on a typical wide-spaced three-element array.

With closer spacing, and more elements, the position becomes even worse! A five-element array has a radiation resistance of less than 10 ohms. With 20 ohms loss resistance more than two-thirds of the transmitter power is wasted. There seemed little hope of achieving the power gain desired by such methods.

Tests were then made on loop type elements, e.g. the Bruce, Bi-square and simple Quad. When used with a second element of similar type, suitably phased, such configurations are capable of quite appreciable power gain. Ten db. gain would probably be a rather optimistic estimate, but 8½ db. gain can be realised without much difficulty. There is, however, the disadvantage that the adjustment which provides maximum back-to-front ratio, does not coincide with that for maximum gain.

A double loop array also poses numerous mechanical and structural problems. Bamboo rods or wire are all very well for a temporary lashup, but the appearance could hardly be called professional!

* Reprinted from "CQ," April 1960.

• A new array giving high gain in limited space. It is similar in some respects to a cubical quad but it has a much improved mechanical structure, higher gain, and facilities for multiband operation without using interlaced elements.

The problems to be solved seemed to fall under the following main headings:

1. To devise an entirely new mechanical structure and so position the elements in space as to achieve a sound and clean looking engineering job.
2. To endeavour to arrange that the tuning positions for maximum gain and maximum front-to-back ratio are as far as possible coincident.
3. To find some means for providing additional gain with the object of attaining an overall figure of 10 db.
4. To flatten the somewhat sharp tuning and increase the bandwidth by using tubular elements of a reasonable diameter and at the same time to eliminate wood or insulators at high voltage points as these cause serious loss in wet weather.
5. To make provision, if possible, for multiband operation without using interlaced elements.

Keeping all these points in mind, it seemed that the best approach would be to build up an entirely new structure in space starting from first principles, and giving special consideration to item 3—increased gain.

The diagrams show how the array began to take shape. Fig. 1 is an ordinary half-wave dipole with a bi-directional pattern. Fig. 2 shows a "V" dipole. Such an arrangement, when used with a reflector of similar construction, gives considerable power gain and the front-to-back ratio greatly exceeds that which can be obtained with a normal two-element array.

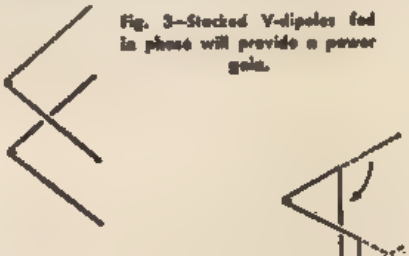


Fig. 3—Stacked V-dipoles fed in phase will provide a power gain.

Fig. 4—The end ⅛ wave of each element is bent in.

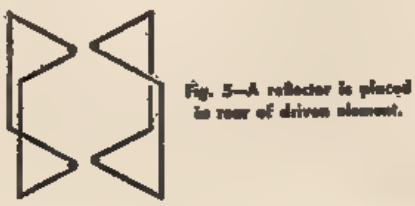


Fig. 5—A reflector is placed in rear of driven element.

Fig. 3 shows two "V" dipoles stacked vertically and fed in phase so as to provide additional power gain. Fig. 4 shows the end eighth-wave of each element bent inwards until they meet. Power can now be fed to the closed loop at a single point either at the top or at the bottom. The next move is to put a similar structure, operating as a reflector, back-to-back with the first (Fig. 5).

CONSTRUCTION

Coming now to the actual physical construction, Fig. 6 shows one possible approach. Eight radial elements, each only one-eighth wavelength long, are arranged symmetrically in two stacked bays around a vertical mast. These elements can conveniently be made of ordinary dural tubing. To maintain a correct phase relationship between the two bays, the tips of the elements are joined together with vertical wires approximately one-quarter wavelength long. This, incidentally, helps to brace the elements against vibration, and ensures a very low wind resistance.

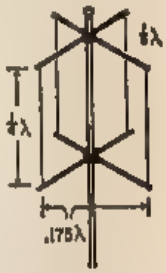


Fig. 6—A possible method of construction.

It will be immediately apparent that such an arrangement is much more attractive from a structural point of view than the normal cubical quad. (Figs. 7A and 7B.) Due to the "V" dipole effect, the power gain is also 1-1½ db. better. Further, it was found that, quite by chance, the side lobes with this type of arrangement are practically non-existent and the adjustment for maximum gain coincides very closely with the adjustment for maximum front-to-back ratio.

It will be seen that the spread of the array and the spacing between the vertical wires is approximately 0.175 of a wavelength so that it can rotate in a circle of 8 ft. radius. With such a spacing, the feed impedance comes out to quite a convenient figure of 40/50 ohms, depending upon tuning and height above ground.

The general performance was so promising that in Feb. 1958 a Patent Application was filed under serial 4083/58. A number of additional developments were then completed, to give more flexible methods of feed and to provide multi-band operation, and these improvements were incorporated in a further Patent Application filed in Jan. 1959 under serial 187. Some of these modifications are shown in Figs. 8, 9, and 10. Fig. 10 in particular should prove attractive to those with limited space as it is effective not only

on 20 metres, but also on 40 metres, with a turning circle radius of 8 ft.!

The stub which in the drawing is shown flapping in the breeze would, of course in actual use, be passed down inside the tubular mast

SINGLE BAND OPERATION

For those who are only interested in single band operation, Fig. 11 shows another interesting arrangement. The height of the array is increased to just over one-quarter wavelength so as to be resonant outside the low end of the band The series condenser on the reflector loop then permits precise adjustment for maximum gain at any point in the band. The series condenser on the radiator feed provides adjustment for the lowest possible standing-wave ratio in the feeder.

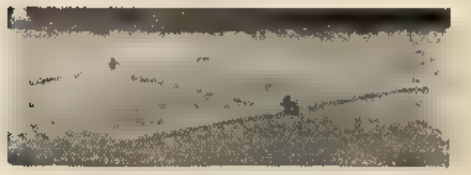


Fig. 7A (above). Before erection.

★

Fig. 7B (left): After erection, with radial arm disposed at right angles.

Another approach would be as per Fig. 12. Tapping points on the radiator rods after the style of a T-match would permit selection of an impedance to suit anything from co-ax. to a 300 ohm or 600 ohm open wire line.

Credit must go to the little girl next door for christening the array. When tests were first being made on a scale model at 145 Mc. she asked if the thing on the pole was a "Bird Cage"? The label seems to have stuck and all things considered it is perhaps not inappropriate.

For the benefit of those who would like to give the Birdcage a try, dimensions are given in the appendix which should enable anyone to construct the single-band version without difficulty. The dimensions are for 20 metres, but can, of course, be re-scaled for other bands.

TECHNICAL APPENDIX AND CONSTRUCTIONAL DETAILS

For 20 metres:—

Horizontal elements: All one-eighth wave long, 8 ft.-8 ft. 8 in.

Vertical wires: All one-quarter wave, 17 ft. approx.

Precise length of vertical wires can be adjusted for resonance and lowest s.w.r. at the desired frequency, or the series condenser method of Fig. 11 can be used.

The reflector should be tuned for maximum F/B ratio. The easiest way of doing this is terminate the lower end of the reflector loop in an open wire stub and slide a shorting bar along the stub for minimum radiation off the back. This setting will be very close to the adjustment for maximum gain.

The eight radial rods can be supported by blocks of insulating material or ordinary hardwood dipped in wax. The r.f. potential is low and no leakage problems will be encountered.

Total distance round radiator loop is approximately one wavelength or $2 \times (495 \div f)$.

Reflector loop is 5% longer due to extra wire in the stub.

It is an advantage when using co-ax. cable to feed the radiator loop at the top, taking the feeder up inside the quarter wave vertical mast. This gives perfect Balun Action thus avoiding loss or pattern distortion due to feeder radiation, and is much more satisfactory than so called gamma matches which are critical in adjustment and likely to introduce power losses.

Radiation is entirely horizontally polarised. There is a phase reversal at the centre of each vertical wire with zero current flowing. The vertical wires fulfill the same function as the vertical wires in a Zerba or Lazy H and are used solely to provide correct phasing between the upper and lower bays.

The X construction brings the current loops in close proximity, giving power transfer to the parasitic element more efficiently than with a Quad or two-element Yagi. The performance closely approaches that of an all-driven array.

The main advantages over a cubical quad are as follows:—

(1) No horizontal boom to distort the pattern or absorb energy.
(2) No insulators at high voltage points to introduce loss.
(3) Tubing is used in place of wire for the parts of the array carrying maximum current, i.e. less resistive loss.
(4) Perfect balun action due to the quarter wave vertical mast. No matching to adjust—no line radiation.
(5) The X type elements have higher Q than a quad loop. The gain is there improved. (See W6SAI Antenna Handbook.)
(6) The X elements give better front-to-back ratio.
(7) The mechanical advantages are self evident.
(8) Extremely low angle of radiation when used at normal heights.

Fig. 8—Vertical wires extended to brace the radial elements.

Fig. 9—Two loops at right is another form of birdcage.

Fig. 10—This construction is ideal for 10 and 20. The stub may be inserted in the mast.

Fig. 11—This single band job uses a condenser to tune the reflector for maximum gain. The condenser in the radiator is tuned for minimum swr.

Fig. 12—Tapping points along the radiators permits selection of impedance from 50 to 600 ohms.

★

VK6 GRAND OLD MAN

"Skipper" Schofield, VK6WS, is the grand old man of VK6. He is totally blind and will be 86 years old on July 18. He is on the air on 40 and 80, and is one of the most active VK6s on these bands.

"Skipper" got his call back in 1938 and up to three years ago was heard on 20, 40 and 80 metres. Then his eyesight failed and after a period realised that there was still much to be gained in Amateur Radio.

He is now looking forward to a special permit to operate on 10, 15, 20, 40 and 80 metres, using a Geloso transmitter.

Without doubt, VK6WS is a splendid example of what can be achieved in spite of the loss of his eyesight. A real inspiration to us all. Many happy returns OM.

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TRADE PRESS RELEASE

Mr. R. H. Cunningham, Managing Director of R. H. Cunningham Pty. Ltd., National Television Engineering Pty. Ltd., and Painton (Australia) Pty. Ltd., will study the latest designs and manufacture of electronic components and equipment when he visits the United Kingdom and U.S.A. Mr. Cunningham left by air on June 5. While in London he will attend the Plessey International Convention.

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V.H.F. NOTES

V.h.f. Correspondents are reminded that notes for this page must be in the hands of the sub-editor (Frank O'Dwyer, VK3OF by the first day of each month. This will permit Frank to compile the V.h.f. Notes and be able to forward them to the magazine by the 8th of the month. It is regretted that the V.h.f. Notes for this issue had not arrived at time of going to press.

AMATEUR CALL SIGNS

FOR MONTH OF MARCH, 1960

NEW CALL SIGNS

VK—

New South Wales

2CB—G. A. Rutter, 21 Hall Rd., Hornsby.
2ADJ—K. J. Powe, 63 Bower St., Manly.
2AJT—K. F. Pulling, 112 Great Western Highway, Lithgow.
2ATA—P. A. Tavares, 18 Eric St., Artarmon.
2AVT—G. L. Thompson, 122 Woniora Rd., Hurstville South.
2ZPC—P. J. Carter, 5 Bell Place, Mt. Pritchard.

Victoria

3ACS—K. C. Seddon, 7 Wilson St., Brighton, S.5.
3AIA—R. C. Richards, 10 Alleyne Ave., Bonbeach.
3ANL—Morwell High School, McDonald St., Morwell.
3AZZ—R. J. Gray, 18 York St., Reservoir.
3ZHE—T. F. Brain, 14 Watson St., Preston.
3ZHL—W. H. Erwin, 1 Kell's Ave., Herne Hill, Geelong.

Queensland

4CC—C. J. Cooke, 79 Kuran St., Chermside.
4ZEH—E. R. F. Hardman, 32 Waterlot St., Yeerongpilly.
4ZGH—L. J. Horrocks, 96 Duke St., Annerley

South Australia

5AG—G. T Allen, 29 Hume St., Salisbury Nth.
5GG—G. A. Gormly, 40 Albert St., Edwardstown.
5GR—H. E. A. Gehrke, 50 Barton St., Blair Athol.
5ML—G. S. Coombe, 1 Everett St., Brooklyn Park.
5PJ/T—J. K. Carter, 25 Shropshire Ave., Hillcrest.
5PZ—Prince Alfred College Radio Club, Dequetteville Tce., Kent Town.
5WY—J. F. Westley, Radium Hill.
5ZGP—G. A. C. Pearson, 47 Clifton St., Prospect.

Western Australia

6NR—N. Cooper, 80 Milford Way, Nollamara.
6ZCJ—R. J. Carter, 135 Grand Promenade, Bedford Park.

[redacted]

7ZAH—K. J. Henricks, 27 Victoria St., Ulverstone.

Territory of Papua and New Guinea

8BW—W. H. Holland, Station: Malaguna Rd., Rabaul; Postal: P.O. Box 187, Rabaul.
9ZJK—J. M. Kendall, Mount Hagen, Western Highlands.

CHANGES OF ADDRESS

VK—

New South Wales

2AS—A. C. Freeman, 36 Cheltenham Rd., Cheltenham.
2BA—B. A. Chapman, Warrimoo Rd., St. Ives.
2TG—A. T. Goldie, Lot 2, Edith St., Bardwell Park.
2ABM—R. G. Morgan, 96 Northcote Rd., Greenacre.
2AJQ—J. C. Turner, 18 Sparkes Ave., Mortdale.
2ALN—L. E. Winton (Rev.), The Rectory, Kandos.
2AXK—D. L. Kinsella, Christian Brothers Intermediate Technical High School, St. Joseph's, Newtown.
2ZHJ—J. W. Hutchinson, 18 Northcott Ave., Wagga.

Victoria

3IM—Q. N. Porter, 40 Fairfield Ave., Camberwell, E.6.
3LP—G. Wiburd, 38 Pearson St., Balmsdale.
3TC—L. M. Renshaw, 6 Merry St., Ringwood East.
3ZO—N. L. Storck, 15 Victoria Rd., Northcote, N.16.
3ALO—A. L. Lowe, 28 Ramsay Ave., East Kew, E.5.
3AMO—M. S. Lang, 69 Bayview Cres., Black Rock, S.9.
3ZCZ—M. R. Osborne, 4 Dundee St., Balwyn, E.8.
3ZEI—G. W. Quirk, Station: MacMelkin St., Whittlesea; Postal: P.O. Box 1, Whittlesea.
3ZGF—L. C. Fowler, 16 Bourne Rd., Glen Iris.
3ZGV—R. D. Voight, 105 Wattle Valley Rd., Camberwell.
3ZHB—W. G. Higgins, 12 Vincent St., Sandringham, S.8.

3ZJE—J. R. Edwards, 52 Orrong Rd., Elsternwick.

Queensland

4DY—E. J. Wright, 35 Benhow St., Ekibin.
4KE—R. L. Shilton, Dalziel St., Stratford, Cairns.
4OM—M. N. O'Burtill, R.A.A.F. Married Quarters, Sidney St., West End, Townsville.
4RJ—R. J. R. Delbridge (Rev.), "Hi-Tor," Tweed St., Burleigh Heads.
4ZP—H. Z. Peters, Station: Mary River Rd. (4 miles from Cooroy); Postal: Road Box No. 406, Mary River Rd., Cooroy.
4ZGX—K. J. Benson, 47 Scarborough St., Southport.

South Australia

5EW—W. R. Edwards, Station Leichhardt Tce., Alice Springs, Postal, Box 31, Alice Springs, N.T.
5FP—F. C. Purcell, 28 Rockville Ave., Daw Park.
5OD—Open Door Radio Club, Methodist Parsonage, Mt. Barker.

Tasmania

7KC/T—L. Cordell, 58 Kanota Rd., Rose Bay.

CANCELLED CALL SIGNS

VK—

New South Wales

2JU—J. M. Moyle.
2AJU—J. M. Moyle.
2APO/T—J. K. Carter (now VK5PJ/T).
2ZCB—E. Berlage.

Victoria

3RG—J. H. Jones.
3VH—L. W. Hoobin.
3ADT—J. J. Mount.
3ANR—N. Cooper (now VK6NR).

Queensland

4HQ—W. H. Holland (now VK9BW).

South Australia

5LI—W. B. Legg.
5MB—H. M. Brown.
5ZGA—G. A. Gormly (now VK5GG).

[redacted]

7RG—R. Garth.
7WY—J. F. H. Westley (now VK5WY).

Territory of Papua and New Guinea

9SP—R. Fleming.
9AMZ—H. S. Young.

W.I.A. D.X.C.C.

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK6RU	3	247	VK6KW	4	199
VK6MK	43	240	VK4HR	12	182
VK5AB	45	232	VK3BZ	2	176
VK4JF	21	219	VK4RW	23	164
VK3WL	14	211	VK3KE	10	163
VK3ATN	36	204	VK6DB	31	161

Amendments

VK4DO .. 20 139

New Members

VK2AJO	47	100	VK3TG	48	101

C.W.

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK3KB	10	278	VK4HR	8	216
VK3CX	26	265	VK5XU	48	213
VK4JF	29	262	VK6HU	18	209
VK3FH	15	226	VK3YL	39	203
VK3NC	12	226	VK2EO	2	191
VK3BZ	6	223	VK5RX	23	185

[redacted]

VK4DO	20	176	VK5JT	54	144
VK3RJ	42	164			

New Member

VK2XU .. 64 129

OPEN

Call	Cer. No.	C'nt-ries	Call	Cer No.	C'nt-ries
VK2ACX	6	232	VK3NC	77	229
VK4JF	32	255	VK3HG	3	225
VK6RU	8	253	VK3WL	45	225
VK6MK	74	245	VK3XU	61	221
VK4HR	7	233	VK6KW	13	214
VK3BZ	4	231	VK3JE	12	210

Amendments

VK4DO	15	196	VK5JT	63	150

New Member

VK2XU .. 79 146

Some Thoughts on V.F.O's.

JOHN ANDERSEN,* VK3ZFO

IT is the author's intention in this article to discuss some of the considerations of stable v.f.o. construction and some of the pitfalls and to give some indication as to how they can be avoided or ignored with impunity, concluding with a brief description of a v.f.o. constructed along these lines.

To have a good v.f.o. one must consider the following points:—

★ Note,
★ Electrical stability,
★ Mechanical stability,
★ Thermal stability.

Let us look at each of these in detail.

NOTE

A poor note is generally tied up with two things; either an inadequately filtered power supply, or interaction between filament and cathode. The first fault is easily overcome by more complete filtering, but the second requires more understanding.

A poor note will arise if the cathode has low heat and electron reserves. In oscillation the cathode will be depleted in electrons and thus cooled. If the heater cannot supply sufficient heat to maintain a constant temperature, then the cathode emission will vary in sympathy with the pulsating filament current (assuming a.c. heaters).

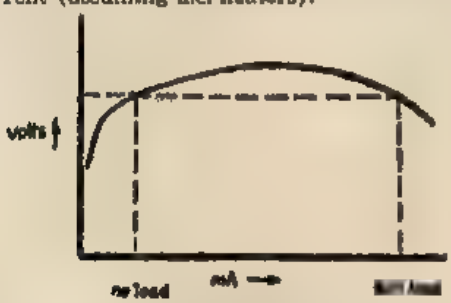

Fig. 1.

The obvious cure is to use a tube of high cathode capacity, which is why power tubes such as 6AG7s and 6CL6s are preferred. One tube often used in v.f.o's. but generally avoided like the plague by designers is the 6AC7. This tube has a massive cathode to enable its high gm. to be attained but suffers from low heater-cathode resistance. This can be overcome by using a separate filament winding and placing the filaments at about 25 to 50 volts above earth by a suitable divider network from the stabilised h.t. source. This eliminates heater to cathode emission by placing the heater above cathode potential, thus removing any direct effect of the heater on the cathode.

ELECTRICAL STABILITY

Providing reasonable care is taken, all the standard oscillator circuits with a fundamental frequency in the 2-10 Mc. region are capable of giving sufficient stability for work well into the v.h.f. spectrum. Admittedly some circuits are inherently more stable than others and probably the simplest and least critical of adjustment is the Clapp circuit, but even this old faithful must be treated with respect if the v.f.o. is to be used for s.s.b. or for v.h.f. a.m.

This means silver mica capacitors and good ceramic insulation wherever possible, including the oscillator valve base, although this is not quite so important.

Good components do not cost very much when the total cost of the unit is considered. After the oscillator, anything goes within reason.

Note that ordinary mica capacitors are quite unsuitable. Although the insulation is good, they are thermally unstable and "creep," i.e. they change in value in jumps as the temperature changes, giving interesting effects on reception.

Another electrical effect is that of oscillator pulling. This is the change in frequency that results when the v.f.o. is loaded by the transmitter. Provided the v.f.o. power supply has adequate reserve, i.e. is fully stabilised, and that the v.f.o. output tube has sufficient electron reserves this effect should be negligible, even when multiplying into the 2 metre band.

MECHANICAL STABILITY

It is obvious that for high multiplication such as is required for v.h.f. v.f.o's. there can be no mechanical instability whatsoever. All wiring associated with frequency determining circuits must be rigid not only within itself but with respect to everything else such as chassis and surrounding components. Hence use heavy gauge wire well supported and make sure that all tie points are quite firm.

Ideally everything should be made massive. The variable capacitor ideally should be an N.P.O. type with double bearings but any good quality gang with no shaft movement will do. Even a b.c. gang can be used provided a silver mica series capacitor is used to pad it down to give the capacitive swing required.

The coil should be wound on a good quality ceramic former with thick wire under tension. Tension winding gives a very rigid structure which helps with mechanical and thermal stability, while the thick wire, coupled with suitable coil dimensions, gives a high Q factor which leads to greater electrical stability.

THERMAL STABILITY

Here we must include humidity effects. Change in the water content varies the air dielectric constant which in turn varies both the coil inductance and distributed capacitance and the tuning capacitor value. There is little that can be done about the capacitor change, but the coil variation can be reduced by dipping in wax or a suitable resin.

This approach must be used with care as some waxes and resins are ex-

(Continued on Page 16)

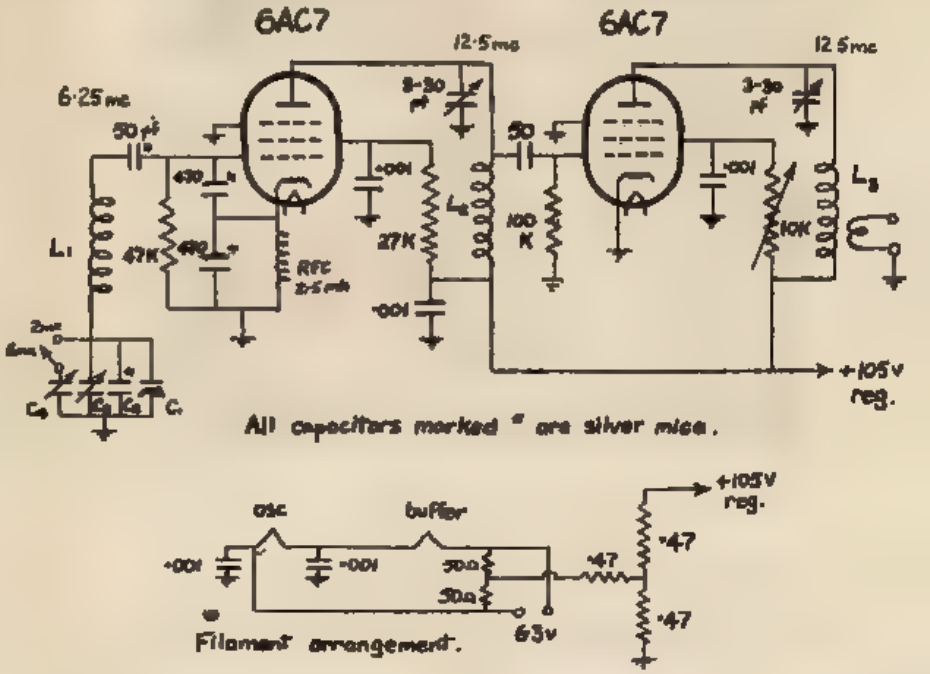

Fig. 2.

L1—No. 11 Set osc. coil form full 24 s.w.g. wire, tension wound; about 2 ins. at 20 t.p.i., ¾ in. diam.

L2—1 in. long, ¾ in. diam. 24 s.w.g., close wound.

L3—As L2 with 5-turn link at h.t. end of coil.

C1—Double bearing double spaced variable of ancient vintage with 4 : 1 gear reduction built in; 2 moving plates only.

C2—About 100 pF, part of which can be N750.

C3—Screw-driver adjustment min. variable trimmer, 5-50 pF., ex AT5.

C4—3-30 pF ceramic trimmers.

* 43 McMillan St., Morwell, Vic.

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SOME THOUGHTS ON V.F.O's.

(Continued from Page 13)

tremely absorbent and can enhance the effect. Generally it is safer not to do any impregnating unless extreme stability is required, as in frequency measuring and monitoring.

If a zero temperature coefficient capacitor is not available then a large gang can be used suitably padded down as described above. This reduces the percentage temperature variation to a very small amount. Little can be done directly about correcting for temperature with the inductance but generally the tuned circuit as a whole is corrected using negative temperature coefficient capacitors.

This now brings me to the point of how much correction is really required. For general use long term stability, i.e. no frequency shift over a half to one hour period is rarely needed. For a.m. a shift of say 500 cycles can be tolerated at the operating frequency. Usually short term stability only is required, i.e. no shift in the time to make a contact, say three to four minutes.

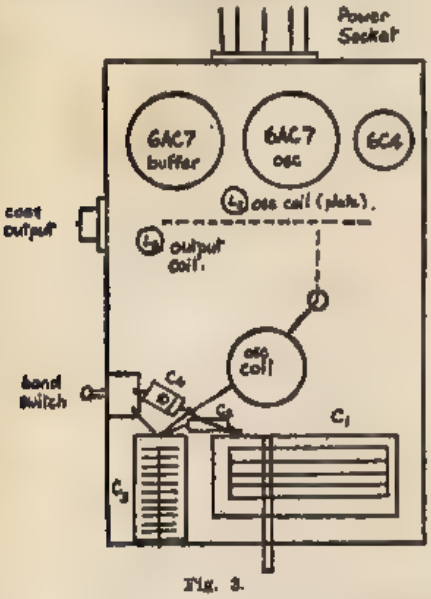


Fig. 3.

Stability of this order can be obtained without correction by careful layout alone. This means placing the frequency determining components as far as possible from the heat sources, viz. tubes. Further, use can be made of the ambient room temperature to maintain stability. By placing coil and capacitor well in the clear with complete access to atmosphere they will attain room temperature readily. This means there will be no guarantee of resettability from day to day, but, providing that room conditions remain constant, temperature effects will be minimised.

One final point concerns VR tubes. These normally do not have a perfectly constant current-voltage curve but something more as in Fig. 1. If portion of the v.f.o. only is switched on for netting purposes, then a different frequency will result due to voltage change on full load. Hence the netting current and the full load current must be arranged to be the same. Those plagued with chirp should check that the no load and full load conditions give the same voltage.

The v.f.o. used at VK3ZFO was built for v.h.f. use where short term stability was the major requirement. Hence the atmospheric method for thermal stabilising was employed. Standard circuitry was used throughout with two exceptions. The filaments were raised above cathode potential, using a divider network from h.t. and a potentiometer was inserted in the buffer amplifier screen to give some drive control.

One other unusual feature is that the buffer is in class B, there being a small amount of grid current. This just happened—there was no deliberate intenition to run things this way.

A completely separate power supply was used to remove all possible effects due to power supply loading on transmit. Detailed circuitry is given in Fig. 2 and the layout in Fig. 3.

The buffer and oscillator plate coils are wound on ½" formers and are mounted under the chassis. All components other than the frequency determining elements are mounted at the rear of the chassis around the valve pins.

The original unit had a 6C4 Pierce oscillator as well, acting as a crystal marker for spotting and band edge marking, but this has been left out of this description in the interests of clarity.

Throughout this article it has been assumed that the standard references on v.f.o's. have been read and their contents noted. I hope that I have managed to convey some of the philosophy behind the statements made in these books and showed a little more clearly what can be done if the pitfalls are known and care is taken to avoid them.

REFERENCES

A.R.R.L. "Radio Amateur's Handbook."
"Radiotron Designer's Handbook."
"The Sideband Handbook," Don Stoner, p 195.
"S.s.b for the Radio Amateur," pp. 185-8.

A Restricted Frequency Range Speech Amplifier

W. E. COXON,* VK6AG

RESISTANCE-coupled amplifiers are well known wide range frequency devices, but for Amateur work it is desirable to restrict the range to a value that is adequate for speech purposes. If you cut off both the highs and the lows your voice will sound very much as it is at present, but will allow twice as many stations to work in the already narrow and crowded bands.

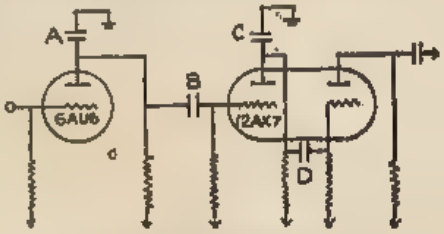
If you use an amplifier capable of amplifying frequencies beyond 10,000 cycles you will have a modulated carrier range of over 20,000 cycles—broad! and high fidelity. But what is the point of doing this hi-fi stuff? The average communication receiver will not respond to anything like this frequency range, and a highly selective receiver will further restrict the audio characteristic.

By using an amplifier that is restricted to a range of 5,000 cycles you will not have lost any naturalness, and it is generally recognised that a total bandwidth of from 500 to 2,500 cycles is adequate. The result is that the radio signal will occupy less space in the spectrum. These remarks do not necessarily apply to n.b.f.m. for if the frequency swing caused by the modulation is excessive, then the radio frequency signal will be broad even if the restricted range amplifier is quite narrow.

By the elimination of all frequency below 300 cycles you will actually obtain a stronger signal because no power is used to transmit these lower frequencies, and if the highs are equally restricted with the lows, the voice sounds more natural. It would be better for Amateur Radio if there was a maximum bandwidth allowable.

Now how can we achieve, with the conventional amplifier, these results? Referring to circuit diagram in which all the extraneous items have been left out you will note four condensers A, B, C, D. A and C attenuates the highs, and B and D the lows. Increasing A and C attenuates the highs more and decreasing B and D attenuates further the lows. The value of these condensers can be finally determined by experiment and a frequency run, but for the average speech amplifier they are: A 1500 pF., B 1200 pF., C 1400 pF. and D 600 pF.

The frequency response curve is like a trajectory. At the frequencies of 50 cycles and 10,000 cycles, the response is 40 db. down. This means that the amplifier is clear of 50 cycle hum, and no elaborate shielding is necessary.



Typical Amplifier.
All resistances have a bearing on the value of the condensers for the desired limited frequency range.

So to sum up, it is the use of four condensers, two of which are essential in any case. There need be no constructional problems and a few minutes' work can achieve a very desirable result. It must be appreciated that the distortion should not be too high, otherwise we defeat the purpose of the restricted frequency range of the amplifier.

* Darlington, W.A.

The Honorable Gentlemen Said . . .

COMMITTEE TO REVIEW FREQUENCY ALLOCATIONS

The following statement by the Postmaster-General (Mr. Davidson) was the basis of a Press Release issued on 20th May, 1960.—

The Postmaster-General (Mr Davidson) said in Canberra that the Government had now considered the reports submitted to it by the Australian Delegation to the Administrative Radio Conference held in Geneva from August to September last year. This Conference, said Mr. Davidson, was of considerable interest to Australia as from its conclusions has emerged a proposed table of radio frequency allocations for the consideration of member Nations.

In view of the importance of this whole question, the Government had decided that it would establish a special committee to conduct a review of frequency allocations to all classes of approved users in Australia. It would study the application of the Geneva Conference table and its relevance to Australian conditions in the radio field.

Mr. Davidson further indicated that it was the Government's intention that this committee should be of a widely representative character. It would seek to appoint as chairman a man of independent status and of outstanding academic and technical attainments who would be generally accepted as an authority on radio matters. In general the committee would consist of persons representing those authorities and bodies with a reasonable and legitimate interest in the use of the radio frequency spectrum. These representatives would be drawn from scientific interests, the radio manufacturing industry, commercial users of radio, amateur operators, public utilities, the Defence group of Departments, the Australian Broadcasting Control Board and the Post Office. The latter would provide the necessary administrative assistance to the committee.

The task of this committee will be fairly complex. The first requirement would be an examination of existing frequency allocations and the present usage of them, in the light of the table arising out of the Geneva Conference. It would also examine particularly any matters relating to radio frequencies that may arise from reports to the Postmaster-General by the Australian Broadcasting Control Board in regard to broadcasting and television.

One of the committee's other major objectives in the review would be to ascertain the manner in which any further distribution of available frequencies might be made in the overall national interest.

The work of the committee, said Mr Davidson, will be of particular interest to radio amateurs who, of course, are users of certain of the frequencies involved and who have recently made representations in regard to these matters.

The Government intends that the new committee will survey the whole field of services in Australia requiring the use of frequencies and report to the Postmaster-General. I will then, concluded Mr. Davidson, submit the report to the Government before decisions are taken on this vital issue.

EXTRACTS FROM HANSARD

We print herewith, further extracts from Hansard of 1st and 2nd June, 1960, of comments made by Mr. Wheeler, M.H.R., and Mr. Fairhall, M.H.R., in the House of Representatives.

Mr. Wheeler (Mitchell).— . . . Radio and Television are another highly technical field which has become attached to the Post Office, more by accident than for any special reason. This is a field for specialists, and I believe that they might be able to operate more efficiently in this field if they were autonomous. There is a definite need for a change of the present system, which is not very successful. Some things have happened recently, particularly in regard to the allocation of frequencies for radio transmissions, which should never have been permitted to happen. I am especially concerned about and am thinking particularly of the threatened curtailment of the frequencies allowed to amateur radio operators. These amateur operators, some 3,000 in number, have given good service to Australia in times of peace and of war. During World War II., they were invaluable, as they have been in floods, bush fires and other emergencies since.

Australia alone among the nations of the free world wants to cut down the range of frequencies allowed to amateur operators, and it advanced such a proposal at the recent international conference at Geneva. But the other Western nations turned it down flat. We were in the unenviable position of finding ourselves in the totalitarian camp in this matter. Two departmental experts, before leaving for Geneva, met interested members from both sides of the House within the precincts of this building and gave an undertaking that if these proposals for restricting the amateur bands were not accepted by the other nations they would not be imposed on the Australian amateurs. However, on the proposals being rejected in Geneva, the officials who represented Australia at the conference added to the report of the conference a footnote reserving the right nevertheless to apply the restrictions in Australia. In my opinion, this was a breach of faith and a breaking of the pledge given to members of this House within this very building.

The Postmaster-General (Mr. Davidson) has now been involved in this deception. In such a technical matter, obviously he has to rely on expert advisers. These advisers recently gave him a departmental brief in reply to an inquiry—a brief which stated that the pledge which had been given before the officials left for the Geneva conference referred not to the amateur bands as a whole, but to only one of them. This is contrary to the clear recollection of those honorable members who had conferred with the departmental officers before their departure to attend the conference. I know that the Minister feels that he must defend his officers, but I think that in this instance he is carrying loyalty too far, and that the department is acting in a manner unworthy of a great department.

I can conclude only that the conduct of these officials is that of harassed men, and that they have reached a stage at which the solution of departmental problems is the only thing that matters. The fact that the appropriating of these frequencies for other uses is harsh and unfair to some members of the public does not seem to weigh with or concern them. This is a stage at which I think it is the duty of the Government to intervene. I believe that these actions which I have described are a by-product of a situation in which a department has grown too big and too complex to be efficiently managed, and that the sooner it is reconstructed the better . . .

Mr. Fairhall (Paterson).—Mr. Deputy Speaker, it is expected that within the next 24 hours the House will go into recess, leaving still to be taken some urgent and, I believe, quite important decisions, particularly in the field of the allocation of radio frequencies involving services of two kinds.

Mr. Bryant.—Hear, hear!

Mr. Fairhall.—I am glad to hear the chorus of support from the Opposition. Among those looking for a decision by the Government on these important matters will be some 3,000 Australian amateur radio operators, to whom the honorable member for Mitchell (Mr Wheeler) referred earlier this evening. Another group waiting for a decision by the Government will be those who are anxiously awaiting the outcome of applications before the Australian Broadcasting Control Board for licences for television stations, and beyond them are the tens of thousands of country people who are looking forward to the commencement of country television services.

At the risk of being tediously repetitious, I want to mention once again the position of the Australian amateur radio operators. For more than twelve months, strong and consistent representations have been made, both in and outside the House, to the Postmaster-General (Mr. Davidson). A good deal of quite pointed criticism of the administration of the Postmaster-General's Department has been offered, and in my view none of the questions asked on this subject has been adequately answered. I do not want to repeat in detail the story of the last twelve months. I know that the House is generally aware that, almost twelve months ago, the members of this Parliament were given in quite specific terms an undertaking by senior and responsible officers of the Postmaster-General's Department —an undertaking which in my view has been repudiated even if only by proxy for the moment. The Postmaster-General holds that there has been no repudiation of that undertaking, but that is simply because a decision has not yet been taken by the department. Since the Minister says that there has been no repudiation, I understand that he does not like the sound of the term, and I therefore hope that the undertaking will be honoured.

In this matter, Sir, I am concerned not least for the Minister himself and for the sort of advice which I believe he has received from senior officers of the Postmaster-General's Department. I want to illustrate this by reference to some departmental letters signed by the Postmaster-General which have recently been sent to members of the Parliament who had made representations on this subject. It is only a week or two since I questioned the Minister in this House and asked him was he aware of the undertaking by officers of the department that, failing any alteration in the reservations of frequencies for amateurs at the Geneva conference of the International Telecommunications Union, the Australian reservations would not be altered. The honorable gentleman said that he was well aware of the undertaking.

At this juncture, I should like to read to the House a paragraph from a letter which was recently received from the Minister by an honorable member. It is in these terms—

> The assurance which it is implied was given to Members of Parliament by officers of the Post Office, in May, 1959, was in reply to a question concerning the attitude likely to be adopted in Australia if the proposals for alteration of the 14-14.35 Megacycle band were negatived by the Geneva Conference. The relative proposal was withdrawn and consequently no change will be made in the band concerned.

That was brought out as though it disposed of the whole matter; but of course the clumsy attempt to suggest that the undertaking referred to only one of the several bands available to amateurs will not hold water. One is surely entitled to question the use of the term "implied" because I can assure you, Mr. Speaker, that in my memory, and in the very lively memory of other members on both sides of the House, there was nothing implied about the undertaking. It was quite unequivocal.

When one goes further into this matter, it is noticeable that letters from the Postmaster-General on this particular subject have continued to repeat the story that the Australian amateur is not worse off than his American counterpart in the availability of frequencies and in general conditions. I have made one effort to indicate that this is demonstrably untrue, and I do not know what you have to do to carry the point, because the fact is that all these reservations are on the record, and any honorable member who cares to add them up will see without doubt after five minutes of simple arithmetic that the Postmaster-General's story is just not true. Why he continues to send out this sort of letter I, for one, will never understand. In one letter, the Postmaster-General stated—

> . . bearing in mind that Australian amateurs, numbering approximately 4,000, will have substantially the same frequency space for their use as do their 200,000 brother enhusiasts in the United States of America . . .

Now, this is one of those cases where simple proportions do not hold. It is not right to say that 200,000 amateurs in America ought to have 50 times the space available to Australians because, in fact, they all operate within the same narrow frequency band. But the operative words of that correspondence are contained in the phrase "have substantially the same frequency space". If one is going to examine this proposition, it would be better to look perhaps at the three top bands—the lower frequency bands—which are most used for international and interstate communications by the Australian amateurs. In the field of 1.8 to 2 megacycles, the Americans have 50 kilocycles wide and the Australians have none. In the field of 3.5 megacycles, the Americans have 500 kc. and the Australians 300, and in the field of 7 megacycles the Americans have 300 and the Australians 150. We therefore have 450 kilocycles against America's 850. If the proposals now under active consideration are put into operation, the total difference will come down to 30 kc. and the real comparison will be 850 in America, because these reservations continue, and in Australia the figure will be 800, which is just a little more than one-third of the American reservations. How, in

the light of these figures, the Postmaster-General is able to say we are not substantially worse off than the Americans is something I cannot understand.

Sir, if I am to continue on this theme perhaps I should quote a little further from one of the Postmaster-General's letters, because he has been particularly careful to cite some sections from the report of the late Mr. John Moyle, who was sent abroad at the expense of the Australian amateurs to be an observer with the Australian delegation. It was a very good thing that Mr. Moyle was sent abroad and admitted to the delegation by the Postmaster-General. But when Mr. Moyle wrote his report it was to say—

> I only wish every amateur could have been present at least part of the time. First let me say that the amateurs received an excellent hearing at every level of the conference and a very fair hearing at that.

The Postmaster-General is prepared to quote this extract to prove beyond doubt that the amateurs of Australia had a fair deal. That is plain dishonesty, because the fact is that Mr. Moyle's report, which I have had the pleasure of reading, referred to the treatment given to the amateurs throughout the world as an international service internationally recognised by the International Telecommunications Union conference. What I am complaining about is not the attitude of world powers to the amateurs; I am concerned about the fact that this sort of treatment can be given on an overall basis, yet in Australia our administration is niggardly, mean and incompetent to a point where it has threatened to cut the reservations of Australian amateurs. That report does not deal in any way with the Australian situation.

For my part, I have said before, and I am prepared to say again, that I would have little confidence in the handling of this very important problem by people who are prepared to mislead their Minister in the way I have indicated in quoting from the Minister's own correspondence.

This leads me to another closely related matter. It deals with the special committee the Postmaster-General has promised to set up to deal with the question of frequency allocation and use in Australia. I find myself hoping beyond hope that this committee will solve the problem of the efficient use of communication channels in Australia because on its decision might well depend the value that Australians will get from their possession of radio frequency channels, and might well decide whether television will operate, not just in the immediate future, but perhaps for all the future. I want to repeat that the job should have been done many years ago by the agencies responsible for this work—the Postmaster-General's Department on the one hand and the Australian Broadcasting Control Board on the other. It may seem idle to say at this stage that the job should have been done years ago, because that is water under the bridge and I would not mention the matter except to underline once again my belief that the department has not dealt with this enormously important problem with the competence that we in this Parliament, and the people, are entitled to expect.

One of the most important questions to settle in the immediate future will be whether television in Australia in its next and succeeding phases will use frequencies in the very high frequency band, as it does now, or move to the ultra-high frequency band proposed in some quarters. The present technical inquiry on which the Australian Broadcasting Control Board is engaged is, in the first place, rather an odd creature. The main job of all frequency allocations in this country should belong to the Postmaster-General's Department, but already some part of the Postmaster-General's responsibility has been usurped by the Australian Broadcasting Control Board to the point where the Postmaster-General's Department is going along to give technical evidence before this body which is almost one of its own creation. That is bad enough, but although I have not had a chance to read in detail the technical submissions that have been placed before the board—because there is an enormous amount of reading and study involved—one thing emerges. It is this: The general consensus of opinion is that Australia, for the future, can find the channels it needs in the very high frequency section of the band. The only persons who disagree with this general contention are those in the Postmaster-General's Department. I should like to know why that department has delayed so long in reaching a decision on this point and in notifying the Government that we might be heading for deep water. Perhaps I should quote from an extract taken from the submissions of the Postmaster-General's Department—

> The adoption of a liberal plan for development of our TV system would therefore leave no option but to use the channels in the UHF band. In this event, it would be necessary to allocate UHF channels to all future stations, except to any additional stations that are to be established in capital cities in the near future . . . It would be preferable for changes to be made now.

I believe that the decision to begin on VHF alone was, perhaps, a mistake. But having gone that far, and committed ourselves to VHF in the cities perhaps we should see what the effect will be if the recommendations of the Postmaster-General's Department are accepted. On the coast, on either side of Sydney where VHF is operating, there are two important centres of population—Wollongong and Newcastle. In Newcastle alone there are about 14,000 television receivers capable of responding only to signals on the VHF band. If the Postmaster-General's Department's recommendations were accepted and Newcastle stations went on to UHF this would mean one of two things. Either the 14,000 people would have to erect new aerials and buy adaptors for their receivers to receive UHF signals or, perhaps, have their sets rebuilt; or, instead of spending the £30 or £40 required to modify the sets, the 14,000 people in Newcastle might prefer to put up with a somewhat indifferent or variable signal from Sydney stations in which case the economic future of the Newcastle licensees would be threatened.

A consequent event will follow from this: It is well known, technically, that the UHF transmitters are not nearly as efficient as those now operating. Consequently they will give a smaller coverage. Therefore, if UHF is to be used in the country, increasing numbers of people in country areas may never get a satisfactory television signal. Therefore the ultimate effect of this will fall almost completely in the country areas. It may well be that this picture ought to be reversed—that preparations ought to be made to shift the capital city stations on to UHF, reserving the more efficient VHF for country areas. This would have to be done by having the metropolitan stations radiate their programmes on two frequencies over a long period in order to allow present owners of receiving sets to change over as their sets become obsolete.

I am not canvassing that as a solution to the problem. I am merely trying to highlight to the House, to the Government, and perhaps to the people, the enormous costs in this field when a mistake of this kind is made early in the service. Therefore it becomes of prime importance that we should settle this question of how many VHF channels can be made available in Australia. Some technical authorities have submitted, with plenty of evidence to back their contention, that if we could get twelve or possibly thirteen VHF channels in Australia we would have enough for an overall competitive national service for many years to come, with the hope that, in the meantime, the efficiency of UHF transmission will have been improved.

I think that we have to address ourselves to two problems: We have to decide how many VHF channels can be made available and, consequently, how many of them we will want. There is a great deal of loose talk going on in the country about having a transmitter at this town and some other town with a small population. There is a problem of economics to be solved before we can scatter television transmitters all over the landscape. It may be that the multiplication of transmitters for television will be so uneconomic as to be impractical. I believe that either that problem should be solved or some clear ideas developed on it before we proceed much further.

It is said that we can probably get twelve or thirteen television channels. This will require some rearrangement. In the first place, that section of the VHF spectrum previously reserved for frequency modulation broadcasting may have to be taken. I do not suppose that that would be a particularly great loss because, if we are competent to broadcast television on UHF, it would be equally competent for us to broadcast sound on the same frequency. So these additional VHF channels can be secured for television and we can shift frequency modulation broadcasting into the UHF band if we need to do so. We would also be involved in shifting the D.M.E.—distance measuring equipment installation of civil aviation. I am reliably informed that the cost of moving D.M.E. out of its present location to clear the way for additional television channels might be £400,000 or £500,000. Once again, this illustrates the enormous cost of a mistake made in frequency allocation. Here patiently, is a mistake that has been made only in recent years because somebody did not see our television requirements far enough ahead. The result is that either we must lose some valuable VHF television channels with enormous and continuing cost to the country, or we correct this error at a costing of £400,000 or £500,000.

If we are going to shift D.M.E. it will be shifted at the public expense. Some public authority such as the Department of Civil Aviation will have to take care of that. If that is not done, the cost to the general public in the modification of television aerials and television receivers may well be three or four or five times that amount. So it is not exactly an uneconomic proposition to move the civil aviation measuring equipment and provide additional VHF channels.

So, the importance of the work of this new committee will readily be seen. It must resolve this clash of opinion between the Postmaster-General's Department and the bulk of the alternative views put before the Australian Broadcasting Control Board. But if we accept the Postmaster-General's Department's proposal, we are headed for the same sort of situation that developed in the United States of America in 1945 which caused the authorities to freeze all television licence applications for a period of four years. It meant the setting up of a congressional committee and of a television allocation study committee to which I will refer in a moment.

I want to come back to this special committee. I do not want anybody to believe that I am not in favour of it. I think it is time that we had a competent and thorough look at this problem. But this is not the most satisfactory solution for these reasons. Until very recently the Frequency Allocation Sub-Committee dealt with the problem of frequency allocation. That committee advises the Telecommunications Advisory Committee, which body, in turn, advises the Postmaster-General's Department. Now we have the Broadcasting Control Board starting an inquiry and, over and above all these things, we propose to set up an additional committee.

Two propositions emerge from this situation: One, I believe, is proof that the Broadcasting Control Board and the Postmaster-General's Department have singularly failed to discharge reasonably their obligation. Because the Broadcasting Control Board over a period of five years, has failed to do a job which it acknowledges as its responsibility, there has been great delay in issuing licences for country television in stage three. This should have been done months ago but it was only in the middle of hearing applications that it became abundantly clear that the job could not be done without a technical inquiry. So the Broadcasting Control Board launched an inquiry which it should have conducted long years before. If the Government now sets up this additional committee promised by the Postmaster-General's Department, it will hardly be competent for the Broadcasting Control Board to issue licences on recommendations coming out of its own inquiry, because if it does it will surely prejudice the overall consideration of this great and important problem by this special committee. I would be very glad to be informed that I am wrong but, as I see it, that will be the position. Therefore, the setting up of this new committee will impose on the Government and the board the necessity to wait until its findings and recommendations are available before it can issue television licences for stage three. To the prolonged delay and the unduly prolonged hearing of applications, created by the Broadcasting Control Board's need to have a technical inquiry, there is now to be added this further delay. It may be that we will not see recommendations for licences for country television before the Government before the end of the year. But, as I say again, I hope that the Postmaster-General can show me that I am wrong in that contention. Nothing much has been said about this special committee. We do not know its terms of reference, we do not know who will be on it and I doubt whether the Postmaster-General knows that at this stage. But it will be a short-term committee dealing with a long-term problem, and therefore it will have some limitations. Nevertheless, as this seems to be the quickest way of dealing with a tremendous problem, I hope that the Government will deal with this matter quickly, set up the committee expeditiously and put it to its essential task of producing some order out of near chaos.

A moment ago I mentioned that when faced with a problem similar to this in the United States, the same sort of organisations in that country which will be co-opted by the Postmaster-General that is, trade organisations, scientific people and so on—set up a Television Allocations Study Committee. That committee's work is supplementary to that of the Federal Communications Commission. It has been set up for a period of three years and it recently issued a report of not less than 730 pages of intensely technical material. This gives us some indication of the magnitude of the

problem before us. I say again that I do not believe that a job of this magnitude and all the difficulties presented by it can be dealt with on an ad hoc basis. I should like to know when we propose to stop temporizing with this problem and separate the control of this great section of the Postmaster-General's present responsibilities—for reasons well stated by the honorable member for Mitchell (Mr. Wheeler) earlier this evening—and put them in the hands of a responsible, completely independent organisation which is impartial and not controlled by users of radio frequencies.

The important point about all of this is that we have a continuing problem; one which changes its very shape, magnitude and kind as the years go by. And as we see more and rapid technological deve.opment in electronics, unless we in this country set up a competent, long-term body to deal with every aspect of this problem as it develops, we will not merely get ourselves into a complete mess but into a mess from which we will not be able to extract ourselves

Here is an extract from Hansard of 2nd June, 1960, of further comments on the subject by Senator Wood made in the Senate.

Senator Wood (Queensland).—When speaking during a debate on a supply bill some time ago I asked some lengthy questions with relation to the band of radio frequencies allocated to amateur operators. Much has happened in connection with this matter since that time, and I have a few remarks which I would like to make before the Parliament rises for the winter recess. I would remind the Government that members of both Houses of the Parliament are watching with close attention the move that has been made by the radio section of the Postmaster-General's Department to impose a new measure of harsh and unwarranted restriction on the activities of radio amateurs in Australia

This is an issue in which the good faith of the Government is under test. Twelve months ago, as a result of widespread protest on behalf of amateurs by members on both sides of both Houses of the Parliament, the Postmaster-General (Mr. Davidson) summoned two senior officers of his department to Canberra to confer with members of the Parliament. These two officers came to act as spokesmen for the Minister on a technical subject, on some of the details of which the Postmaster-General himself was, understandably, not expert. He gave these two officers his charter to speak for him.

In the course of their discussions with members they gave an unambiguous promise that if the proposals they had developed for further restrictions on amateurs were rejected by the International Telecommunications Union at the conference that it was about to convene in Geneva, the Commonwealth would accept the judgment of that conference and would not impose the proposed cuts in Australia. The conference has given its judgment. The most competent technical tribunal in the world has found that the Australian proposals were unnecessary, unjustified and harsh. It has thrown them out summarily.

Ordinarily, that would be the end of the matter, but subsequent developments give the strongest grounds for concern. One is the fact that, despite the undertakings given here a year ago, the very two officers who gave those undertakings in Canberra sought to evade them in Geneva, by writing into the treaty there drafted a postscript which would give Australia the right to make the cuts in frequency allocations for amateurs within Australia, even though such cuts had been rejected elsewhere. The writing of that postscript was a brash act of moral repudiation which gravely foreshadows an intention by the departmental officers to attempt to repudiate in fact.

The second development is the announcement by the Postmaster-General that an ad hoc committee is to be appointed to consider generally, during the coming parliamentary recess, the use of radio frequencies in Australia. This committee could do a productive job if its members were chosen from persons with an objective outlook, and if the undertaking given to preserve the frequencies at present used by amateurs were made clear to the committee at the outset of its inquiry. I hope the Postmaster-General will do this. Unless the position of amateurs is thus safeguarded at the outset, the committee could be used by the Postal Department as a back-door method of applying the cuts it has promised not to impose. Honorable senators know perfectly well that a committee of inquiry can be selected in advance which will produce exactly the finding that the government, or the government officers, selecting the personnel of that committee want it to produce, particularly if a government department with an axe to grind has a disproportionate influence on the committee's investigations.

I hope that the Postmaster-General has not been led by departmental subterfuge into the position of being party to another departmental attack on the rights of radio amateurs in Australia. The fears that this may be so are given weight by two serious recent events. As the report of the Geneva conference shows, the Australian official delegates carried their anti-amateur campaign to unprecendented lengths, even voting with countries in the Communist bloc against liberalising measures for amateur radio sponsored by Britain, the United States and the other democracies. This fact alone destroys all faith in the department's goodwill towards amateurs and contradicts the claim of the department that such goodwill exists.

The second occurrence which eloquently illustrates the real attitude of the department towards amateurs is that which was related by Senator Hannan, who told us an amazing story of a departmental attack on a Melbourne amateur who gave an instructional radio demonstration during a children's session on television. In that case the attack by the department has been marked by aggressiveness, evasion and mis-statement which must surely be without parallel. It is now more than a year since the unfortunate victim gave the demonstration complained of, but he has still received no departmental apology for the treatment to which he was subjected. In these circumstances one can have no confidence in the department's claim that it intends to give Australian amateurs a fair deal.

Our radio amateurs are citizens of very real worth. We know that during various national crises, such as when disastrous floods have occurred in northern New South Wales and other districts, the radio amateurs have given great assistance. As a resident of North Queensland, I know of the very valuable work they have done when cyclones have ravaged that part of Australia. For this reason alone I believe that every encouragement should be extended to them, and that the Postal Department should not attempt to build a wall of obstruction to bar their progress and development.

SIDEBAND

Bud Pounsett, VK2AQJ
23 Seiffert Centre,
Queanbeyan, N.S.W.

Sideband activity has made such rapid progress in recent months that a regular feature devoted to sideband news and techniques should be of interest to many Australian Amateurs. In beginning these notes, I hope to have the support of those of you who can contribute something towards making this feature a success. My job will be made so much easier if you are willing to give me that help. Any items of news on sideband matters, descriptions of your equipment or explanations of how you overcame that particular problem, will be of interest to other sidebanders and those who are interested in sideband. If you have anything at all that you think will interest the other fellow, I will be delighted to pass it on.

14 Mc. SIDEBAND FREQUENCIES

A very important event took place on March 10, 1960. That was the extension of the American phone band from 14,300 to 14,350 Kc. This has brought much QRM into what used to be known as the s.b. DX portion of the 20 metre band. A way out has to be found, and unless we all get together on this, we will find ourselves very unpopular with the a.m. fellows.

Information received from my ZL correspondent, ZL1ATQ, shows that R.S.G.B. have proposed the band 14,100 to 14,125 Kc. for sideband. The Canadians have gone along with this to such an extent that they are petitioning their licensing authority to extend their 20 metre phone allocation down to 14,100 Kc.

QSLs

When sending along your QSL card for s.s.b. contacts, be sure to endorse the card for two-way s.s.b. Many awards are now available for two-way s.b. contacts and your card must be endorsed as such, to be of any value to certificate hunters.

AWARDS

While on the subject of awards, the Okinawa Amateur Radio Club offers a certificate to Amateurs for working five (5) KR6 stations. This will be endorsed for two-way s.b. if this applies. The address to which you send your five QSLs is: Okinawa Amateur Radio Club, A.P.O. 331, Postmaster, San Francisco, Calif., U.S.A. There is no fee.

DX

Since the W/K QRM invaded the top end of twenty metres, there has been a general migration to the 14,100-14,200 Kc portion of the band by a lot of the s.b. DX. Some noteworthy prefixes to be found in this part of 20 are: G, GI, HB9, HC1, HI8, OD5, VE, VP2, VP5, VP2, TI, TG9.

There has been quite a lot of 40 metre DX activity over the past few months. Consistent contacts with Wa have been nightly occurrences, although the advent of summer QRN in the U.S. has made the task a little difficult in recent weeks. Some of the VKs who have been working Ws are 3EL, 2AAB, 2RI, 2ET, 2AQJ, 2AQU, 3SM and 3APS (d.s.b.). ZL3ID has been extremely successful in his regular nightly skeds with W4MZK.

The Canadians are also endeavouring to have their forty metre phone band changed to permit operation in a portion other than that occupied by the W stations. This leaves 7.0 to 7.2 Mc. The U.S. Novice band is at the high end of this range and the c.w band is at the low end, so it is possible that they may get 7.05 to 7.15 Mc. for phone. This could have interesting possibilities for s.b. contacts with the VEs.

MIGRANT

Some weeks ago I had a rather unusual contact with K4TLB, of Charlotte, North Carolina. Jim is getting ready to migrate to Australia and is very interested in all things Australian. We now have a weekly schedule and much information on Australian living conditions has been passed along, so it is hoped that a new s.b. station will soon be heard on the bands, possibly with a VK1 call. You will know Jim by his pleasant Southern accent.

FREQUENCY DRIFT

I propose to level some constructive criticism at some in our ranks. Let us face it, we are judged by the signals we produce and quite naturally we aim at good clean stable s.b. transmissions. However, the aim is not always good and one of the faults that occurs too often is frequency drift. This problem is a difficult one, but it can be cured. The main cause of drift is heating of the frequency determining components. A sure cure to the problem was described in "A.R.," August, 1959, page 15 and in "Single Sideband for the Radio Amateur," 2nd Edition on pages 186-191. Your attention is also drawn to page 203 of the "CQ" publication "New Sideband Handbook."

How often have you been called by another station, while enjoying a two-way s.b. contact and been requested, "Please fellas, how about using the same frequency?" You may argue that your conversation is not intended for the third fellow. That is not the point, it is my claim that in most cases the two sideband stations started out on the same frequency, and one or both have drifted. Net operation makes it imperative that you remain "on frequency."

It is not only the v.f.o. that can be the culprit with frequency drift. I once had a 9 Mc. xtal oscillator that drifted slightly. The reason for this was too much h.t. on the oscillator tube, a change from 300 to 200 volts cured it.

NEW BEAM DEFLECTION TUBE

March, 1960, "QST" has details on the use of new tube, type 7360. This tube can be used as a balanced modulator, balanced mixer or product detector. In a filter type exciter, 80 db. of carrier suppression is possible, whilst better than 60 db. is claimed for a phasing exciter. A product detector using this tube has great attraction, as the functions of detector and b.f.o. are combined. This also applies to the balanced modulator circuit, the 7360 is used as a crystal oscillator and mixer tube. I hope to give further details of this tube's performance shortly, as I will be using one in my own exciter. The price in the States is 3 dollars 50 cents.

ITEMS OF INTEREST

2EN is having outstanding success with his mobile equipment. Ed is using a modified KWM2 transceiver. He has altered the original pi output circuit to an ordinary coil and capacitor with link coupling. The link is co-axed to a Z match coil at the bottom of the whip antenna. The whip is centre loaded and resonated to 14,320 Kc. for 20 metre operation. The signal from the KWM2 is excellent and many W stations have been contacted while mobile in the Sydney area. The signal for 40 metres is outstanding too. Congratulations, Ed.

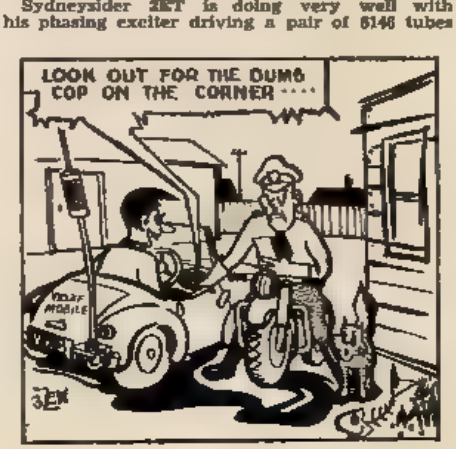
Stan 2EL, one of our keen experimenters with all types of s.b. equipment, has a novel transmitter on the air at present. The exciter is a phasing type, generating the sideband signal at the v.f.o. frequency which has a range of 4.5 to 5.0 Mc. The signal is then betrodyned to the various bands with appropriate xtals where a pair of 6DQ6 tubes help it on the way to the DX. Dipole antennae are used for 40 and 20 metres. What will Stan come up with next?

Over in South Australia, 5EF has been putting out a fine signal for many a day. His HT32-75A3-Mosley tri-band beam makes a dent in the DX bands, while Comps uses dipoles very effectively on 40 and 80 metres.

A newcomer to s.s.b. is 3KB of Brunswick. Alf is using an HT37, lucky man, and should be doing very well with it as soon as he gets his antenna problems straightened out.

Sydneysider 2ET is doing very well with his phasing exciter driving a pair of 6146 tubes in Class AB2. Tom generates his signal on 3.5 Mc. and can be heard on 40 and 20 metres with a solid signal. The h.t. power supply at 2ET is interesting. It uses a 385-0-385 volt, 150 mA. transformer and three 5V4G tubes in a bridge circuit. 25 uF of capacity provides the filtering and the resulting h.t. is 900 volts with quite good regulation. Tom is forwarding the circuit, so watch out for it.

That about winds up the sideband notes for this month. I would appreciate your suggestions and contributions, sidebanders, so let me have your contribution or suggestion, either over the air or to the above address by the end of the month.



STOP PRESS

NORTHERN TERRITORY—VK8

Upon a request from Federal Executive of the Wireless Institute of Australia, the P.M.G. Department has agreed to the allocation of VK8 for the Northern Territory. This change is effective as from 1st July, 1960.

CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

THIRD PARTY TRAFFIC

Editor "A.R.," Dear Sir,

The granting of third party traffic privileges to all Amateur transmitting stations is a reform which is long overdue. Over half of the world's Amateurs enjoy these privileges already; the remainder are still looked upon by authority as "experimenters" pure and simple. There was a time when all Amateurs were experimenters. Since the Second World War, progress has been so rapid in the field of electronics that there are few whose financial status and technical knowledge are sufficient to keep them one jump ahead of industrial and government laboratories. Amateurs do make an important contribution to the science of radio, of course, but those who imagine that Amateurs are tireless research workers whose one idea is to probe into the unknown are thirty years behind the times.

It is noteworthy that the P.M.G. Department in the United Kingdom gave up this pretence some five years ago and deleted the clauses in the regulations which required station licensees to experiment. Instead, they stated that the Amateur licence was issued to enable the licensee to undergo "self-training in the art of radio communication". This was not to say that those of an experimental turn of mind should not indulge themselves, but it did allow those whose interests lay elsewhere greater freedom to enjoy their hobby in any way they wanted. And it also placed the emphasis where it belonged—on communication.

That third party traffic would help to further the cause of communication cannot be denied. In traffic handling the message being sent must get through intact. There can be no question of "filling in the gaps" by inspired guesswork, either because a sudden burst of QRM made the sending station sound like a Chinese opera, or because the other fellow was sending too fast and you didn't like to admit that you couldn't keep up with him. The art of accurate communication would call for high standards of station efficiency and operating ability, and the greater use and development of break-in, voice control, R.T.T.Y. and other aids.

It follows that not everyone will participate, and in order that other users of the spectrum be not inconvenienced by traffic-handling, it could be confined to, say, the first ten kc. of the c.w. and phone sections of each band.

Any move to introduce third party traffic-handling into the Commonwealth is bound to encroach on the prerogative of the P.M.G. Department and, this being so, the Department would need to be convinced that it would be a good thing all round. Its objections would probably be (a) the Department considers that channels owned, operated and controlled by the Department, or its representatives, are the proper channels for the transmission of traffic; (b) the paper work involved in making the necessary changes in the regulations, and (c) loss of revenue.

Let us deal with these points. The answers are surprisingly simple.

(a) By laying down rules to indicate what does, and what does not, constitute a legitimate Amateur telegram (e.g. not more than 12 words of conventional greeting—or any stipulation the Department cares to make), and by requiring that copies of all telegrams sent and received be kept on file for a specified period of time, and that file to be open for inspection at all reasonable times by an authorised officer of the Department, the Department would exercise a measure of control over the traffic handled. It should not be difficult to devise other safeguards if necessary.

(b) The above could be written into existing regulations as follows:

(i) The Department's definition of what constitutes a proper message to be included in a re-written Para 86.

(ii) Para 67(a) to read: "Messages or visual images on behalf of third parties, except as laid down in Para 86".

(iii) A reference to the inspection of the message file to be included in Para 104.

(iv) Add a new appendix (Appendix 6) showing the layout of a message (preamble, word count, text, signature, collation, etc.)

(c) It is doubtful whether the Department would experience any loss in revenue at all. It must be remembered that messages will be accepted by Amateur operators on the understanding that (i) the service is free (non-acceptance of remuneration is already covered in existing regulations), and (ii) there is no guarantee that the message will be delivered to its destination within a certain time—or even at all! This being so, it is certain that not a single word of the intelligence normally conveyed by letter, telephone or G.P.O. telegraph services will be re-routed through Amateur channels. On the contrary, messages will only be originated on the basis of "Well, if you're sure it won't cost me anything, perhaps you could send a wire to my cousin George in Tasmania and tell him we're all getting along fine." In other words, **messages which would not otherwise have been sent.** It is probable, too, that the operator receiving a message for delivery in his area will either telephone it, or post it on to the addressee. Thus we see, in this instance, that the originator is pleased, cousin George is cheered up, the P.M.G. has collected some revenue, and two or more Amateurs feel a sense of satisfaction in having got the message through and of having been able to help somebody.

From the foregoing, it will be seen that the hardest thing the Department will be called upon to do is to overcome a very natural reluctance to sub-let a small portion of its own privilege. But it would be able to frame the rules, and it would be dealing with responsible citizens (if the Department did not believe us to be responsible, it would not have issued us our licences). Furthermore, it would encourage the growth of a secondary communications network covering the entire Commonwealth—a very handy thing for a nation to possess in time of emergency.

I would therefore say to the Department: "Take a chance—you won't regret it."

—A. J. Jeffrey, VK5AJ.

Editor "A.R.," Dear Sir,

I read with interest in this month's "A.R." the letter written by Ben Pooley, VK5BP, concerning third party traffic and emergencies. I agree with his ideas and would like to see some sort of organising along these lines if possible.

I am not in a position as yet to join the W.I.C.E.N., but I hope to when circumstances permit.

Standardising the frequencies used would be a good idea. The band 1840 Kc. to 1860 Kc. might be a good one to do the W.I.C.E.N. practises on as it is not available for general Amateur use. I don't know which bands are used by W.I.C.E.N., but the use of say two bands—one for short distances and the other for long distance operation would be desirable. If one band could fulfil both of these requirements all to the good. Standardising the bands used in all Divisions and the frequencies would help to unify this service.

Possibly the equipment used could be gradually changed to a more uniform type suitable for the particular service envisaged for it. The simpler the equipment the better, consistent with good, reliable operation. It would not be necessary to work DX or to have particularly high quality modulation—if telephony is used.

These are only my own ideas on the matter and some even wouldn't apply unless the P.M.G's. Department could be persuaded to see the advantages of operation as suggested by VK5BP.

I don't know what goes on in the W.I.C.E.N. networks so why not let us know what goes on chaps, we would be interested.

Rodney Champness, VK5ZCD.

"A WORD TO THE WISE"

Editor "A.R." Dear Sir,

In the June issue of "Amateur Radio", under the title of "A Word to the Wise", it was stated firmly that overseas electric authorities use "Red" as the colour for the earth lead.

Insofar as the United Kingdom is concerned, the official system specifies "Red" for live, "Black" for neutral and "Yellow" for earth.

It will be found that all reputable British equipment manufacturers adhere to this scheme, although sometimes the colour "Green" is substituted for "Yellow" in the earth lead.

Finally, always check your pin connections, both at the load and source ends.

—Fred Jenkins, VK5WS (G3WS).

AMATEUR TELEVISION

Editor "A.R.," Dear Sir,

Apparently we have among us many Amateurs who are "interested" in Amateur television, but we hear all too little of what is actually being done in this field. As I see it being interested alone is not enough, and in fact means very little when it comes to making use of our experimental permits.

As there is a need for a certain amount of co-ordination in A.T.V. constructional work, in particular regarding standards and frequencies, how about a description of his equipment by each active experimenter and so let others know what is being done. Well known examples of A.T.V. activity is the work by 5EC, 2AAK and 3AUX to mention a few, and no doubt others are quietly building various items for picture transmission.

To add weight to this proposal I would like to describe my own A.T.V. gear and the frequencies used. A vestigial sideband transmitter similar to that proposed by 5EC has been built and is followed by a QQE03/20 linear amplifier on the 1 metre band. This transmitter is complete with a.m. video and f.m. audio modulators, and follows the Australian Standards. The frequencies used are 290.25 Mc. and 295.75 Mc. leaving the lower 2 Mc. of the 1 metre band for normal communication operation.

A flying spot scanner using a 3BP1 and a 931A provides the video modulation, the medium persistance of the c.r.t. being greatly overcome by d.c. clipping and gamma correction. This unit is suitable for simple test patterns and call sign.

A modified loran indicator unit, as well as being a useful oscilloscope, provides synchronising pulses which are obtained from the 100 Kc. crystal oscillator-frequency divider chain.

The receiver is a crystal locked converter 6BC4, 6ZB8, 6AK5, 12AT7 x 2 from 1 metre to channel 1 of a standard t.v. receiver. I have chosen this channel as being the most suitable for this purpose. A parametric up-converter is under construction for use as a low noise broadband preamplifier. The antenna consists of 16 driven elements in front of a chicken wire reflector.

From tests conducted between Melbourne and Geelong there seems no doubt that high radiated-power and a very low noise receiver will be essential for those of us who must operate over such distances.

—R. J Heighway, VK3ABK/T.

THE R.S.G.B. AND R.T.T.Y.

Editor "A.R.," Dear Sir,

There appears to be some misapprehension in certain quarters regarding the attitude of the R.S.G.B. towards R.T.T.Y. The position is that here in the United Kingdom there is a small but flourishing group interested in this method of communication—the British Amateur Radio Teleprinter Group—which works in close collaboration with the R.S.G.B. Indeed, the Honorary Secretary of the Group, Dr. A. C. Gee (G2UK), has prepared a paper on the technical standards for Amateur Radio Teleprinter operation which will be submitted to a conference of Region I, I.A.R.U. Societies at Folkestone, England, in June, 1960. The paper has been prepared at the request of the R.S.G.B.

Despite the difficulties, interest in R.T.T.Y. is growing in the U.K. Suitable equipment is not easy to come by, but small quantities do become available, from time to time at prices which Amateurs can afford. Such equipment is quickly snapped up.

I should be glad if you would let your readers know that, far from wishing to discourage interest in R.T.T.Y., as has apparently been suggested in some quarters, the R.S.G.B. hopes that many more British Amateurs will experiment with this branch of Amateur Radio.

—John Clarricoats, O.B.E. (G6CL),
General Secretary, R.S.G.B.

NEW PUBLICATION—DX'ER

Editor "A.R.," Dear Sir,

I have a note to hand from Sven Elfving, SM3-3104 (I.S.W.L. SM-8304) who is one of Europe's top S.w.l's and the editor of the DX'er, a publication of the Polar Bears Radio Club. This publication of some 12 pages is very up-to-date in the DX field and other points of interest for the S.w.l. Surface mail is slow, but airmail will keep any reader up to date. Any interested Amateur or S.w.l. in VK may have full details from myself, Tim Mills, VK2ZTM (WIA-L2033), 18 Bullecourt Av., Mosman, N.S.W.

—Tim Mills, VK2ZTM.

D X

John C. Pinnell, VK2ZR
15 Summit Avenue,
Earlwood, N.S.W
Phone UW 4248.

Most of the reports this month indicate a downward trend in the DX field. This is to be expected as the sunspot cycle for good distance transmission must be nearly over for 10, 15 and 20 metres. However, the 40 and 80 metres should pick up. During the next few years the situation will gradually worsen, although for those who carefully comb the bands there will be many good pickings. It means DX will become harder and harder to get, and we will have to change our normal times of operating to perhaps a more inconvenient period if we want to keep in the running.

At 3AOM, George did not hear many signals except strong W's. However, on 20 metre phone he did work CT1CL, DL2DW, OA2A, TG9CD, VE5RX, VR's and W/Ks.

Bud 2AQJ found the going fairly tough and most of his contacts on 14 Mc. s.s.b. was with W/Ks. KR6LB, KA2YL, KA2MF, KG1AA, and VE4CP were also worked on that band. He also worked a few ZLs on 7 Mc. s.s.b. Bud has been made sideband Sub-Editor for "A.R." If anyone has any news that may be of interest to the s.s.b. fellows, he would very much appreciate it if you would pass it along to him at 22 Seiffert Centre, Queanbeyan, N.S.W.

Laurie 2AMB was not so active this month, but did work VK0AB, SP2QS and heard FG7FX, VK9HC (Cocos Is.), HC2CS (on 14 Mc. c.w.). He also worked CN8CS on phone.

Frank 2QL, due to W.I.A. activities, was not on the air very much this month, but did make contacts on four bands—all c.w. These included 3.5 Mc. JA7XF, K3EKO and heard JA3EA, UA0FK; 7 Mc. VR3Z, G3LET; heard HC2IU, XE2SON, UR3BU, 14 Mc. FG7XF, OD5CT, ZS7M; heard LX1DP, VK9HC; 21 Mc. TI2CMF, heard EL4A.

Don BERS1002 is still very active and heard 7 Mc. c.w.—UB5KID, UC2BG, OK3TG, SP7XN, UA0FG, UA0KZA, JA8AE. 14 Mc. c.w.—DU1OR, YV5BZ, CN2BK, OZ5EL, W2AIS/KV4, HC4IE, KP4APY, YV4CI, ON4JB, EA1BC, UQ2KAB, HC2CS, YV1AD, CN8BF, LA1K, PZ1AM, TI-2CMF, LU0AC; s.s.b. GW2DUR, ZK2AB.

Ron 5GM has done some very good work on 28 Mc. phone. Nearly all contacts were made during daylight FK8AU, G2IT, G2XK, HK1XT, JA1BRL, JA2KK, JA3ACT, JA4CX, JA5JS, JA6EH, JA7IL, JA8BY, JA9JG, JA0KR and others; KA7AX, KL7DJJ, KS2XK/KH6, OH3SM, PA0OTC, VU2PS, VE3RP, VE6CF, VK9RO, VK-9RM, VS5GS, VS6CL, VR2BC, WA6DFH/MM, K6ACU, W6BHM, W3NBH, W9ZHS, W7OGX, K0MNO, K7ISW, W5PXH, etc., ZS1AI, ZS1PV, ZS5CU, ZS6ARA, ZS8YB, ZS6OY, ZS6ATQ, ZS6MH, ZS6AIA, AS7L, ZE1JJ, ZE3JU, ZE3JZ, 4X4IX.

5RK, thanks Ray for information supplied.

Eric BERS195 logged 9N1GW on 14 Mc. and now has a total of 268 countries heard with 253 confirmed. How do you get those confirmations OM? He had exactly 100 QSLs last month which is his best month ever. Eric overheard VP5VB saying they would be going to Malpelo Islands and KZ5 next but exact dates unknown. Also ZP5OG has been calling for VK/ZL contacts around 0230z 14 Mc. c.w. Call signs heard: 7 Mc. c.w.—G3LET, W2AIS/KV4, LZ1KBA, SP2RQ, VP7BB/MM, VR2DK, ZC4AK, ZS6NE; 14 Mc. c.w.—DU1OR, FO8AC, FM7WU, HC1JU, HK1FF, HL9KS, HZ1AB, HV1CN, KC-6JB, K3JQX/KS6, LU1CB, ST2AR, UI8AK, UL7KAA, VK0AB, IT, JM, PM, VP5BL, 5VB, VR1B, VR2DP, VS5AD, VS6BJ, EM, YS1O, YV5ADP, ZK1AR, AU, ZP5OG, 9N1GN.

VP3VB, Danny Weil (Yasme III.) has been active on c.w. 14075 Kc. QSL via KV4AA.

Afton Westcott, of Atherton, Qld., is a very enthusiastic listener on several bands. He has one antenna 425 ft. long, 60 ft. high and a Quad mounted on a 50 ft. tower. On 80 Mc. a four element w./s. Yagi, 37 ft. high is used. All calls listed were on phone: 14 Mc. VS6BE, s.s.b. BV1US, G3JKZ, G4BWH, FA2TW, I1APM, JZ0HA, KA2RB, KA7DT, VK0PM, VS6BE, VU-2BK, OA4CU, W6AL, W4DPV, W4WYI/MM, VK6IT; 21 Mc.—FQ8AR, DL7AD, G3IRD, G5ZT, HR3JBD, G3FPQ, VQ6GM, UA0LO, W6DTN/MM, HL9KJ, W4EWS/MM; 50 Mc.—JA8 1BWD, CYX, DFX, FM, ZT, COR, DGK, BVO, BKF, CB, BMX, BIR, DBY, BXX, BMV, CDW, CBZ, DEX, BCI, DLW, JA2YL, AOV, ZP, OLS, ATQ, JA3BFQ, BFO, CMN, AQW, ABB, ASP, BCI, JA4NO, WZ, JA5JO, JA6WS, JA7UA, JA8NF, JA0RO, KA2PJ

2ZR worked 173 DX stations for 31 countries—mostly in Europe.

Some selfish individual pirated the Bowden and Brompton Boys' Club call sign for a couple of days on the 28th and 29th March using c.w. on the 21 Mc. band. In his eagerness to get contacts he was not satisfied with the call sign VK5BA but tacked on /VR4 to make a nice juicy bait for the DX boys. It had its effect, for now QSL cards are rolling into the Club from a number of countries. In a number of cases coupons are attached to the QSL. Not only is it disappointing to all those who thought they had worked the Solomon Islands, but to answer all cards received and explain the situation will be a costly and time consuming chore for the club. Perhaps the "sneak" did not realise what the outcome of his action would be—or, maybe he is getting double pleasure. VK5BA uses 28 Mc. exclusively. (VK5JO).

All notes for the DX page must be in the printer's office by the 8th of each month. Several reports have been reaching me around that date and must, therefore, be carried over to the next month as I must have time to write them up and get them to Melbourne. Please let me have your notes not later than the 1st of the month.

I received No. One copy of The DX-er which is a very good DX Bulletin issued by the Polar Bears Radio Club in Ornskoldsvik, Sweden. Editor is SM3-3106. It consists of 12 pages and is issued every third week. 5-6 pages of real f.b. DX items, then two pages of calls heard, QSLs received, and lots of other features as, "How to get QSL from . . ." "40 Metre Club," etc. Cost in Australia is 1½ dollars by surface mail and 6 dollars by airmail for 11 copies during 1960. Either Tim Mills, 19 Bullecourt Ave., Mosman, N.S.W., or Thomas Hayward, 36 Lilydale Gr., Auburn, E.3, Victoria, can make arrangements for you to receive your copies.

NEWS AND NOTES

Nine SM1 stations on the Isle of Gothland are active. Anyone trying to complete his W.A.S.M. award should look for SM1BT or SM1ABI as they are the most active.

KS6AA and K6CQV/KS6 are both active from American Samoa. KS6AA is on 10 mx phone around 0100-0200z. K6CQV/KS6 is using c.w., phone and s.s.b. on 21 and 14 Mc.

Sikkim has two active Amateurs: AC3NC and VU2KV/AC3, both are using 14 Mc. c.w. and can be heard at 1400-1800z.

VS1BK plans more operation from North Borneo as ZC5BK. QSL via VS1 Bureau.

FS7RT will be going to Anguilla soon. His call sign will be VP9RT

A rare one from Swaziland is ZS7P who has been heard several times on 14 Mc around 1700z and again around 2000z. Another one from this area is ZS7R at about 2030z on 21 Mc c.w.

A station for those who need Zone 23 is UA0KYA on phone and c.w. 14 Mc., and also 21 Mc. c.w between 0500 and 0700z.

VQ6AB and VQ6GM are active from British Somaliland. VQ6AB works on 15 and 20 metres c.w. at 1600-1800z and has been heard on phone on 15 metres at 0700-0800z. VQ6GM is mostly on phone on both 15 and 20 metres at 1700-2000z.

ZD6DT and ZD6WM have fairly good phone signals from Nyasaland at 1600-1800z. They nearly always use 15 metres.

From Crete, SV0WT is very active on 14 Mc. s.s.b. and 21 Mc. phone, 2100-2300z. SV0WZ also very active on 14 Mc. c.w of a morning. SV0WI is active on 7 and 3.5 Mc., but as his times are about 2200z it is a bit late for VKs.

HV1CN is active from the Vatican City. He is on 21 Mc. for two periods each day 10-12z and 19-22z. QSL via W2BIB.

CR8AC, in Goa, has been active again on phone using the 21 and 14 Mc. bands. He QSLs direct if I.R.C. is enclosed, otherwise via I.S.W.L.

W3ZA/EP is moving on to Yemen and if he can manage to get a permit hopes to have the prefix 4W1. Later he will leave for the Soudan ST2, and then onto VU2, VU5 and ET3.

YK1AT has now left Syria and has returned to Prague. Those wishing to receive his QSL should write at once to him via the OK1 Bureau.

TF5TP, Iceland, often calls CQ Pacific on 15 metre phone, at 1100-1300z. He also calls on 20 metre c.w. at 1500-1800z. QSL via W2MUM.

Another one active from Zone 23 is JT1AB. He is frequently heard on 14 Mc. c.w. at 1500-1700z. QTH is Box 368, Ulan Bator, Mongolia, however it seems to be more reliable to QSL via OK1KX through the OK1 Bureau. JT1AW is thought to be the XYL of JT1AB.

If you have not received your QSL from 9N1GW contact W7PHO who has received all logs up to 5th March. Later logs will be sent whenever mail can be got out. Send a self addressed envelope and I.R.C.

VR6AC expects to be back in VR6 any time now after a trip to U.S.A. He has a new transmitter and expects to work lots of a.m. phone.

KJ6BV, Johnston Island, between 0500 and 0600z around 14250 Kc. mostly on week ends.

Due to very rough seas, HK0TU was unable to land his gear on Malpelo. As time ran out the gang had to return to HK without making any contacts. It is too early yet to know if another effort will be made.

ZL3VB, Chatham Island, endeavours to be active around 14100 Kc. from 0430 to 0530z each Sunday

It is understood that VK2FR will be transferred to the Australian mainland in October.

DL7AH/DL9PF DXpedition 1960 to Andorra under PX1PF is set under the following conditions: From July 10 (evening) until July 23 (morning). Operation from 28 to 3.5 Mc. on c.w. and s.s.b. (SB10 adaptor). Full size ground planes will be used from 28 to 7 Mc., and a dipole on 3.5 Mc. 24 hours a day service. They prefer "tail-ending" practice up or down their own frequency. QSL via D.A.R.C., Munich 27, P.O. Box 99, or direct via DL9PF (with s.a.s.e.) Log will be kept in GMT, so QSLs in GMT too, please! 3BG)

Don Shaw (VK3PV/VK3APV), whose postal address is C/o. O.T.C. Radio Station, Rockbank, Vic., will be handling QSL cards for Graeme VK0AB this year.

QSLs RECEIVED

2AMB. FA8RJ, HA8KWG, HL9TA, OE3FS, ON4GM, PY1HQ, LZ1AG, SU1MS, VK0RH, VR1B, UC2AD, YO3IA, ZM1DA, ZS7M.

2QL: VQ2JM, OD5PS, FB8CE, PX1PF, MP-4BCV, ZC4RP, ZE3JO, JT1AB, UO5PK.

3AOM HP1LB, YV5HU

BERS195 CN2BK, CR4AX, KL7WAI, KP4RK, K6CQV/KS6, SU1AL, VE6AAE/SU, UC2AD, OQ5PS. UD6AI, UG6AW, UM8KAA, UQ2CO, VK0IT RH, TF, VQ9HV, XE1RY, 9M2GA, MP4BCR/MM

2ZR 94 cards received, UA1DG, UA4KED, UA6MA, UC2AA, UL7KBK, EA4FO, DL9JE, VQ2IE, PA0VB, ZS1OU, ZS5MD, ZS6IX, ON-4CE, CX8BT, OH3OB, G5LK, OK2QR, VK0RH, SL5AX, KR6ZT

ADDRESSES

CR4AX—Alaor, Gouveia, Aeroporto Espargos, Ilha Do Sal, Cape Verde Is.
K6CQV/KS6—P. Hodges, Airport Project, Pago Pago, American Samoa.
SU1AL—Ahmed Labib, 41 Refaat St., Shobra, Cairo, Egypt. (BERS195)
VR3Z—Now in U.K. QSL via R.S.G.B. (2QL)

I nearly went into a "flat-spin" this month—thought I was going to be unable to get the notes in on time—without notice work took me away from home for a couple of days right at the critical time.

I wish to thank the DX Bulletin of the West Gulf DX Club, Texas, and The DX-er, Sweden, for some of the information used in these notes. And thanks to the VK gang for their assistance. 73, John.

* Call signs and prefixes worked.
z zero time—GMT.

S W L

Maurice Cox, WIA-L3055
Flat 1, 37 Boyd Crescent,
Olympic Village, Heidelberg,
N.23, Victoria.

Here's that man again with the news, views and doings of the VK s.w listeners. My word the months go around quickly, I no sooner get them done and it's upon me again to give up listening and start writing to and for you ardent s.w listeners.

Once again I say thank you to all of you who have written and made these notes possible. So keep up the excellent work.

VICTORIA

At last month's VK3 meeting, VK3YB gave us another very fine and enjoyable stereo demonstration. We sat in silence for two hours; we all enjoyed it very much; thanks a lot Fred.

I have been getting all the listeners' numbers ready for the new Call Book, with the able assistance of my XYL, Noreen, who does the typing for me. When I checked to see if all were financial, I was sorry to see that only about 30 are. What's happened to all you old members and some new ones, where are you all hiding? What's taken your interest away from radio eh? Wish I knew, because I don't think there is another finer hobby than radio. In fact there isn't a finer hobby in the world.

I would like to hear from all the members who were financial once, to find out why they dropped from the Group. I am trying with my fellow officers to build up the Group here in VK3. We would like all of you to write us with your opinions and ideas, and we will do, to our best ability, all to help you. So go to it chaps.

CHEQUE POPPERS

Firstly from the master of us all, Eric Trebilcock, L3041, BERS195. He had 100 QSLs last month (I had 2, just shows you the difference), but so far this month has had only 7 (I have one for him, that's 8); best are from CN2BS, KL7WAI and K6CQV/KS6, also got a second Montana QSL towards his H.A.S. claim, but still needs North Dakota QSL to complete the 48 States. Montana was his second last State to come good. He thought he would have had his first N.D. card before second Montana (he thought wrong, didn't he?).

His scores are now 266 heard, 253 confirmed, 40 zones. He added 9N1GW for a new one heard on c.w. 14 Mc. and PX1PF gave him his 253rd country QSL.

He hears an odd bit of European DX on 7 Mc. these days, but mostly the band isn't too hot now. However, 14 Mc. is very hot from about 2 p.m. E.A.S.T. till midnight. Europeans come in very well via long path just before dark—not too good from midnight on, and pretty poor from 5 a.m. onwards till after lunch. Recently he had G3IBR and family call upon him, en route to VK2 from G land. He took 'em for a trip around and back to ship at night; good for you, Eric. Thanks for the letter, Eric, I'm always glad to hear from you, as your notes keep the boys wishing they were you, hi.

L3088 (BERS1002) met Doug Courtney, of Bomaderry up in the wilds of VK2, a person whom I greet with open arms for several reasons. Firstly, he is an addition to the c.w s.w.l. gang, thus giving the old faithfuls a bit of well needed competition; secondly, because unlike many of our members, he listens on the Amateur bands. Now don't get me wrong chaps, I am not buying into the evergreen commercial versus amateur argument, I am just pleased to see another Amateur listener join our ranks. Doug is an old fellow like Maurice and myself, he is married—the daddy of three daughters, and is a painter by trade. Rx in use is an AR7, that ever popular inhaler now used by many of our listeners, including Tim Mills, Bill Davis, Barney Smythe, and myself. Should any of our readers have any comments or tips on this rx Doug would be very pleased to hear from you. His address is Tanang St., Bomaderry, N.S.W.

INTERFERENCE ON 40 METRES

The regular listeners on this band become immune to the commercials which clutter up the portion of the spectrum of interest to the DX minded, but of late it has become so intense that it has forced both Eric and Don to concentrate on 20 metres. These commercials seem immovable, but not so this VKS3 whose broad signal at times blots out the entire c.w. segment of 7 Mc.

Complaints from VK2 Amateurs have, at times, been successful in temporarily eradicating this menace, but not often enough for most of us. Log him every time you hear him, take all details of his transmission when he is inside the band and send full report to your Division or better still to Federal Executive who will in turn take appropriate action.

We have little enough band space available these days without having to loose one of our most popular bands for the sake of a signal which seems to consist of nothing other than a series of vee's. In passing, I would mention that when the interference is absent from this band, there is a lot of choice DX to be found —early morning, and mainly Europeans.

AWARDS

Continuing with general awards, pending receipt of further information from overseas, here is another of the I.S.W.L. efforts.

Heard All States.—At the time of writing, requires confirmation from every State in the United States of America, excluding KL7 and KH6. Conditions are as for all I.S.W.L. awards, and all applications should be addressed to 86 Barrenger Rd., London.

NATIONAL FIELD DAY

The response to the S.w.l. Section of this popular contest is most heartening, congratulations to the winners in each State and see you all in the N.Z. Memorial Contest and the R.D. The latter will be a real clash this year, that is between the members of the VK3 Group at least. How about us challenging last year's outright winners?

Heard on the grape vine that Peter Neilsen is in hospital and had an operation which was successful. Hope to see you soon Peter, all the best for a speedy recovery.

SOUTH AUSTRALIA

After about 12 months of existence, the s.w. listeners in Mt. Gambier held their first meeting on Tuesday, 10th May, at 8 p.m. The meeting was held in the Wesley Hall with Fred L5030 in the chair and Dale Aslin (L5025) as Acting Secretary for the evening. The interest in this Group is very keen. Various points of interest were discussed and it was decided to hold meetings on the third Thursday in each month until October. If interest increases, meetings may be held more frequently.

Listening at L5031's QTH has been very limited as his brother Trevor (L5030) and himself do not get home until late at night from work, but have heard quite a few VKs coming through at good strength on 40 mx about 6.30 p.m. S.A.S.T. on the 15 mx beam. Recently during a storm their half wave antenna was blown down and at the present time the 15 mx beam is being used on all bands, but does not work out too well on 40 and 80 mx. He is hoping to get some poles soon for another half wave antenna.

Here are a few details of some of the VKS s.w.l'ers.:—

L5030: Fred Aslin, age 33. One of the leaders of the Group, who is acting President at the moment. He uses a No. 19 converted for 240 a.c., covering 80 and 40 mx and a five-tube set for 20, but he hopes to have 15 and 10 mx, and possibly 6 and 2 mx, covered by the R.D. Contest this year. Antenna is a half wave on 7 Mc., 40 ft. high, centre fed with open wire and 6 inch spaced feeders.

L5031: Jim Edlington, age 28. With Fred, revived interest in VKS as regards S.w.l. He also uses a No. 19 rx on 80 and 40 mx, but has no other bands covered at the present time. A long wire antenna is used about 80 ft. high.

L5025: Dale Aslin, age 15, keen on s.w. listening, but as yet he has no rx for 240 a.c. The only set he has is a dual wave rx which covers the 80 and 15 mx Amateur bands operating from 6 volts. He is planning to build and 8 or 9 valve rx in the near future. The antenna is still a long wire, but hopes to have half wave antenna for 7 Mc. erected soon.

Trevor Niven, age 15, has not yet received a number (possibly L5035) as he has just joined the Group. He uses a long wire antenna. Like most of the other s.w.l's. in Mt. Gambier, he uses a five-tube dual wave rx tuning the 40, 20 and 15 mx bands.

L5030 and L5031, are aged 15 and 16. They use a No. 19 rx on 80 and 40 mx and a six valve dual wave rx covering from b.c. through to 23 Mc. (covering 80, 40, 20 and 15 mx). As the power may be connected soon, they are thinking of building a five-tube rx tuning from 80 through to 6 mx. Antennae are a one element 15 mx beam and a half wave antenna on 7 Mc. which is at present on the ground. The 15 mx beam is 23 ft. high and fed with coax.

If anyone can forward details of a s.w. rx circuit (between 5 and 8 valves) worth constructing to the boys they will be very pleased as they are interested in building their own receivers.

TASMANIA

Firstly, a hearty welcome to two new members—Messrs. A. J. Males and G. F. Sharp. It is hoped to see or hear from both of you often in the future—that also applies to the rest of you in VK7 land.

No doubt all members have been listening to the Broadcasts on Sunday mornings and have heard VK7JB requesting talks by licensed Amateurs. Well, I wish to add to that by saying how about a few of you energetic members giving a bit of your time and arrange for somebody to give a talk or perhaps show some slides. Providing the subject interests most, it need not necessarily concern Radio.

There were seven members at the April meeting and one very welcome visitor—Marcus VK7MH. We were very pleased to have you along Marcus, hope to see you more often.

A great circle map was drawn on the black board and a discussion was held on reception from various QTHs. It is hoped that members gleaned quite a bit of useful information from each other.

A proposal was made by 7MH that s.w.l's. monitor Amateur bands to ascertain whether b.c. stations are infringing on the Amateur bands. Remember chaps (as on your QSL cards), station call, approx. frequency, time and dates; be sure of your facts and then advise the W.I.A. Secretary (7KA) of the particulars.

Heard 7KS the other week offer to show members over his station. Thanks very much Ken, we will take you up on that in the near future. Thanks also to 7KA for the same offer. Last but not least, our President, Pat Graves, would like all members to make an extra special drive for new members—O.M's., YL's, and XYL's are all welcome. If any mainlanders come to our Apple Isle, just drop a line and we will lay out the welcome mat.

DX LADDER

		Heard	Confirm.	Zones
L3041	Eric Trebilcock ..	266	253	40
L3088	Don Grantley	195	84	28
L3055	Maurie Cox	173	23	18
	Rod de Balfour ..	168	108	26
L3074	Mac Hilliard	166	52	—
L3065	Ian Thomas	115	16	13
L3072	Tom Haywood	72	3	—
L3015	Mike, Ida	66	28	—
L3006	Ian Woodman	4	1	1

SHORT WAVE LISTENERS CONTEST
JULY, 1960

Object: to log the countries of the Oceania continental area.

The eligible countries are: CR10, DU, FB8 Adelie Land, FK8, FO8, FW8, FU8/YJ, KB6, KC6 East, KC6 West, KG6 Marianas, KG6 Iwo Jima, KH6, KJ6, KM6, KP6, KS6, KW6, KX6, FK1-2-3, PK4, PK5, PK6, JZ0, VK, VK9 Lord Howe Isl., VK4 Willis Isl., VK9 New Guinea, VK9 Norfolk Isl., VK9 Papua, VK9 Nauru, VK9 Christmas Isl., VK9 Cocos Isl., VK0 Macquarie Isl., VR1 Gilbert & Ellice Isl., VR1 Phoenix Isl., VR3, VR3, VR4, VR5, VR6, VS4, VS6, ZC5, ZK1 North Cooks, ZK1 South Cooks, ZK2, ZL, ZL1 Kermadec Isl., ZL3 Chatham Isl., ZL5 N.Z. Antarctica, AM6, ZM7

When: From 0000 GMT Sunday, 17th July, 1960, to 2400 GMT Saturday, 23rd July, 1960.

Rules: 1. The contest is open to s.w.l. resident anywhere in VK call areas.

2. All Amateur frequency bands may be used.

3. Both c.w. and phone loggings are permitted.

4. For contest purposes the listed countries may be logged **only once per band** irrespective whether c.w or phone.

5. Scoring. For each listed country logged on a specific band where (a) some proof of a contact is submitted, 2 points will be scored, and (b) a station is heard calling another without contacting, 1 point will be scored. "CQ" calls not permitted for contest scoring purposes.

6. Logs submitted must show in the following order Date, GMT, band, call sign of station heard, call sign of station being QSOed or called, your signal report, remarks including remarks by tx station if possible, points claimed. Use a separate log sheet for each band.

7. A summary sheet to show your s.w.l. call sign, name and address in block letters, total points claimed (obtained by adding together each band score), details of rx and aerial used.

8. The judges' decision will be final and no correspondence can be entered into.

9. Awards Certificates will be awarded to the top three scorers in the contest, irrespective of mode of reception, or call area of residence.

10. Entries must reach the Secretary, M. R. Cox, Flat 1, 37 Boyd Cres., West Heidelberg, not later than 6th August, 1960.

PREDICTION CHART, JULY '60

NOTES

FEDERAL

JAMBOREE-ON-THE-AIR

The Jamboree-on-the-Air will take place on the week-end of October 22-23, 1960 (midnight to midnight GMT). The regulations are as follows:

Any Radio Amateur with a past or present association with the Scout movement or operating on behalf of a Scout unit may take part. To join the event one simply calls "CQ Jamboree". Stations may operate on any Amateur wave band and with any equipment that is consistent with licence requirements. All participants must strictly observe their licence regulations. Either phone or c.w. may be used.

The Jamboree-on-the-Air is not a contest and there will be no prizes to the operator making the most contacts. The event is organised with the sole purpose of promoting contacts between Scouts of different countries, but it will, of course, include valuable signalling training for boys who take part.

The Boy Scouts International Bureau (77 Metcalfe Street, Ottawa 4, Canada) will operate from a station in Ottawa, call sign VE3JAM, on any of the following approximative frequencies: 28,450 Kc., 21,250 Kc., 14,175 Kc., 7,100 Kc. and 3,750 Kc.

Amateurs wishing to take part should contact the nearest Scout unit or the National Scout Headquarters in your country.

U.S. CALL BOOK MAGAZINE

Federal Executive has for sale at 25/- post paid a few copies of the following issues of this monumental directory of Hams. Winter 1959/60 (United States only), Winter 1959 (world-wide). Apply to Federal Treasurer, Bob Boase, 85a Franklin St., Melbourne, Vic.

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FEDERAL QSL BUREAU

The Bloemfontein Branch of the South African Radio League ran an official station ZS4UF during celebrations held during May to commemorate the Union Jubilee Celebrations which commemorated the jubilee of the founding of the Union of the four Provinces. Unfortunately, details did not arrive prior to the functions being held. An unusual QSL card will be sent to all stations who made contact.

Signals heard from VE3AAE/SU belong to the station of New Zealand born Des Taylor, who is serving with U.N.E.F. Forces in the Gaza Strip. Des uses both c.w. and phone, mostly on 14 Mc., and will be in the area for one year. He requests QSLs via R.S.G.B. or the VE3 Bureau.

Don W9QPI, in sending out cards for HL9KT from Seoul, South Korea, says: "Sorry cards are so late. Due to a turnover in operators we are just getting around to checking old QSL files and mailing cards for QSOs that have never been confirmed."

The Federal Bureau is holding a card from JT1AB addressed to VK3AR. The card relates to a QSO on 14 Mc. c.w. at 1130z on 2nd September, 1959. Lawful owner may have it on application.

—Ray Jones, VK3RJ, Manager.

— . . . —

FEDERAL AWARDS

Two further W.A.V.K.C.A. Certificates have been issued as under:

No. 132—W9QGR, Ray Bayer
No. 133—W8TXL, Harold Bennett.

—A. Kissick, VK3KB, Manager.

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NEW SOUTH WALES

Forty-eight persons attended the May meeting which was held on 26th May in Science House, Gloucester Street, City. Proceedings were commenced at 8 p.m. when the President (2ACD) opened an Extraordinary General Meeting. Purpose of which was to deal with the Council's recommendation to bestow Life Membership upon Major Collett (2RU) "in recognition of his services over a period of many years to the N.S.W. Division of the W.I.A. and to Amateur Radio generally."

The sponsors of the proposal, Max 1MP and Dave 2EO, spoke of Major's active association with Amateur Radio and the Division, particularly in respect of the Central Coast Section (formerly Gosford Amateur Radio Club). Readers will recall that Major was one of the founders of this flourishing section of the Division. Ted 2ACD also spoke briefly of Major's activities and, when placed before the meeting, the resolution was carried unanimously. Congratulations, Major.

The President then closed the Extraordinary Meeting and opened the monthly meeting. After the usual formalities had been attended to, a Notice of Motion from Arthur 2JM was seconded for discussion. The theme of the Notice of Motion was for some form of recognition of the founders of VK2WI Dural to be effected. After lively discussion of the motion, it was resolved that a suitably inscribed plaque recording the particulars relative to the official opening of Dural be affixed to the VK2WI building. Other business included a resolution regarding the VK2 Bulletin and a report from Federal Councillor, 2EO.

The lecture for the evening, "The Construction of Components and Their Behaviour at Very High Frequencies", was delivered by Barry 2ZAG. Barry dealt with the types of construction of capacitors, resistors and valve sockets and of the limits of performance of each type. Several samples from a manufacturer's production line were passed around for inspection and aroused the interest of the audience (and the wrath of the cleaner!). The vote of thanks was moved by Barry 2AAB and passed with acclamation by the appreciative audience.

Club of the month is the recently-formed Young and District Amateur Radio Club. From liaison officer, Peter 2APP, comes news of increased membership and activity. Peter also advises that the club intends to display Amateur transmitting, receiving and test gear at the Young District Show in September. The display will be located in the Exhibition Pavilion and it is intended to operate a transmitter during the two days of the show. Good show!

Club liaison officers are again reminded to contact VK2WI before the Sunday morning broadcasts with club news and also to send monthly reports of your club's activities to the Divisional Publicity Officer, 2MP.

Stop Press: The Council of the Division at its last meeting received a letter of resignation from Ted Whiting, 2ACD. Because of private and business reasons, Ted considered he could not discharge his responsibilities as President to the members of the Division. It is an unfortunate loss to the Division and it is hoped that at a later date Ted will again be able to take an active interest in Divisional activities. Bill Lewis, VK2YB, has been appointed President for the remainder of the term of office of the present Council.

HUNTER BRANCH

VKs 2AKX, 2SF, 2AYL, 2RJ, 2ZL, 2ZJR, 2ZNW, 2ZDC, 2XT, 2FP, 2OA, 2CS, 2QB, 2ZAV, 2AQR and associates Sutherland, Finlayson, Richardson, Stobbs, Gray, Fyfe, Bailey were in attendance at the May meeting to hear John Lark and Bob Winch lecture on matters concerning v. and u.h.f. John, with his 6,000 meg. t.v. links, parabolic arrays and klystrons, held interest throughout and there is no doubt we get a wide variety of subjects from our lecturers and always seem to learn something new.

Harry 2AFA, who is still not the best, sent his apologies. Lionel, of 2AWX, is still being relieved of his responsibilities and thanks are due to 2XT, 2AYL and 2SF. Wal 2AXH celebrated his 75th birthday during the month and is still as young and vigorous as ever—keeps in trim by climbing horizontal poles attaching and removing co-ax.

A mob of Yanks were in town recently, but only Fred ("Tiny") Lee, K5OJL, accepted the hospitality of 2XT and 2CS. Tiny said the others were too preoccupied with the occupation of skirt chasing. Earlier in the month, the Goons could be heard working ZLs on 40 around 0700 hours, rather early of course for sane people. Dave 2BZ was portable at Surfers in the Premier and Sunshine State and has since returned, feeling the benefit and ready and willing for another year of toil.

Our honorable Secretary must scratch his head with his feet as was in trouble with a splinter in his big toe. That is what comes of painting and redecorating his house whilst on holidays. Ben 2ABT passed through Newcastle after hesitating overnight at Cousin Bill 2ZL. XYL Jean is progressing favourably after her op. If Ben is absent from the air for any length of time, don't worry, he probably only went through another red light and this time the cops saw him.

Loud and long have been wails around Fennels Bay—if you want a fight, ask Zulu Lulu how is his multimeter. Just as well he has more points than a porcupine. Our beloved President, Lionel, has taken to the brush and it must be interesting to see him up the pole or rather ladder as I am sure half the time he would be painting with his pipe and smoking the brush. Ernie 2FP still busy building test gear. Frank 2FX now has his leg out of plaster, but understand that the Doctor, sorry, the man with the medical degree, is not too pleased with the result.

Les 2AOR came out of hibernation and spoke to a few choice friends, said he had been too busy or lazy or something. Have an idea he had to replace a couple of masts which were chopped down by the T Valley Indians. Now is the time to start planning to go on a diet and be in trim for 1st October when your Branch Annual Dinner will take place with of course the Blackalls Field Day to follow. The July meeting will be on Friday, 8th, at University of N.S.W., Tighs Hill, whilst Bill Hall will be at Home to all comers on Wednesday 27th. Both times 8 p.m.

CENTRAL COAST ZONE

Major 2RU is absent on a short fact-finding mission to VK3 with some other Rotarians. His strong signal emanating from an 813 is missed from the Monday night round-up at 2030 hours on 3635 Kc. Gosford Club is very pleased to find three new ticket-holders after the recent exam. They are Alec Swinton, Ken Harriman, and Geoff Gill (native of Bristol, wait till you hear him on phone). John 2AJY is heard in rounded tones on 80 now that winter has brought a slight lull in people's ills. Trevor 2TM, of Woy Woy, has the screen modulation going on his 6146 with 15 watts input. He has had lots of contacts on 40 and 80. Fred 2ALA is now a DX man, having worked a VE in fine style on 20. I don't expect to see him on 40 for months. Reg 2AI has also tasted DX, having worked France on 20 one afternoon using an AT21, doubling in the final. He has another trip to VK3 scheduled so you should hear his 40 metre mobile s.s.b. signal again.

The club enjoyed an excellent lecture-demonstration from associate John Brier in May, on "Technical Problems of an Electricity Undertaking." He showed how the 1050 cycle remote relays worked and that they could be used to bring in 21 different circuits on pushing the correct button. The audio generator is 10 kw and is a motor-generator. Wally 2AXH is active on 40 and 80. Jack 2FJ is heard occasionally. The lure of Channel 2 is spreading even to Saratoga. Brian 2AVJ not active, too much work. He hopes to move into Bedlam Parade, sorry, I meant Headlam Parade, chaps. It so happens that two other Hams are also moving into this street! Your scribe, 2ON, is planning a bigger s.s.b. signal with an 813 linear in AB1 and is active on 40 and 80.

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VICTORIA

NEEDLING AND WHEEDLING SECTION

Yes, it's the same as last month, but with a different twist. As this becomes part two of what I hope will be a short course in "How to get the Most from your Institute," the basic principles laid down last month will have to be expanded and the tempo of the instruction stepped up.

Of course, the pins—conscience pricking for the use of—may not have been sharp enough or possibly they may have had some rather leathery epidermis to penetrate. However, whatever the reason it is sad to have to relate that information news, scandal and all other forms of libellous material have been shorter than a half wave on 10 gigacycles. Getting a 73A4 or equivalent out of that W would be easier.

Perhaps shock has taken toll of the weaker chaps and the others probably don't read the magazine anyway. Now if we started offering six months on a secluded Pacific island—expenses and all found, mind you—for news—strictly rare DX of course—I'd come along as an unofficial observer and write a book on the doings! Might be something in it at that. But then I'd probably be the only applicant!

It's a funny thing, no matter to what organisation or institution you belong, there are always the characters who want to resist change. Amateur Radio is no exception and unfortunately there are chaps who imagine that because the passage of time has given them a few grey hairs or alternatively denuded them, that wisdom automatically follows.

I'd be the first to agree that used logically and with a spirit of progress, the wisdom of old age can be an inspiration to the younger members of our community and in particular our Amateur organisation.

Unfortunately there is a tendency to decry the efforts of the younger members of the Institute who are trying to put a bit of red blood into a rather anaemic descendant. The s.w.l's., limited operators, and generally those young up and coming members of the Amateur movement are largely deciding the destiny of Amateur Radio at the moment. You might like to have a hobby when you are in your wheel chair, so give all the encouragement, constructive criticism, and progressive thinking you can to the younger members.

This point was raised by 2AKJ during one of the Sunday broadcasts and I think that it is worthy of your attention and action. The question is the one of populating or perishing, and I mean populating the Amateur ranks with new members. Remember your own start in Amateur Radio?

The A.R.R.L. Handbook was probably the first thing you bought and treasured with that hard earned 829B or something.

What about donating a copy—not too old—to the local High or Technical School and encourage the young and enthusiastic lads? I can personally vouch that they are read in two High Schools. Even a local library would take your donation, and to those proud fathers who have offsprings at Secondary School, it would certainly buck the old ego no end to find that Junior has been saying that my Dad gave the library a book on radio!

Had enough? Well you might find something of interest in the next section. Read on!

THE VILLAGE IDIOT

The beginning of the month provided another entertaining evening apart from the excellent selection of films on t.v. tube manufacture. I was acting Secretary for the meeting and unfortunately failed to keep track of points that would make interesting copy.

However, the presentation of the balance sheet and resulting comment led one to believe that an inquisition in the bankruptcy court must be an every day occurrence to some chaps. Some people have suspicious minds! Seriously though, it was evident that quite some thought will have to be given to a few points by Council, and it was pleasant to hear voices raised in query and getting answers, what is more.

Finance worries me—I always cross the road when passing my bank—so hurrying quickly on we had a few comments on other matters, especially one about 3WI, and its re-building. Like lots of other things, this has been left to a few chaps and such a colossal task needs more than a few. Anyone with any ideas, or offers to help?

My earlier reference to legal matters reminds me that we have in our midst a formidable LL.B. who takes on terribly exciting cases like parking offences, etc. The Federal Councillors Club may well require his services when they are putting in their briefs for increased margins, pensions and other benefits!

I haven't heard any comments on the broadcast since the last issue but it has been cold these mornings and country chaps are forgiven for having a sleep-in on Sundays.

Some comment on the call-up after the broadcast has been to the effect that it should revert to the original zone call-up. If that's what you want, put it on paper and it'll be considered by the proper authority.

By the time this appears and is read (I hope) the Eastern Zone Convention will have been and gone and next issue should contain some of the more publishable doings from the Wise Men of the East. I will be there in person so your report will contain all the pertinent truths, which, of course, is the basis of any good reporting!

GENERAL AND IMPERSONAL

The club rooms appear to have come in for a bit of criticism lately, not very much, but enough to have people thinking about it. Rest assured chaps, that Council have plans in hand to make facilities even more attractive. You read in the last issue of plans to improve the library. As members you are the ones that will benefit by all these activities so what about a few words outlining your requirements. Remember, half a dozen fellows can't think of everything! Who knows, we might even be able to provide facilities for checking that tx to end all tx's with power supplies provided, meters, etc., etc. What think you on it?

At the next monthly meeting Jim Goding will be giving the lecture. I understand that the subject will revolve around Electronics and its application to Medicine.

Library.—As promised last month, here are titles of a few articles that have appeared in recent magazines received at VK3. Maybe of interest to someone.

"QST," May 1960: "A Three Tube Filter Rig." An inexpensive rig for one band though can be arranged for any band. Uses 5 and 8 odd meg. xtals. "A V.t.v.m. R.f. Probe." Can be used with any v.t.v.m. and would be suitable for r.f. up to 21 volts r.m.s. "Technical Correspondence." Three band single xtal conversion oscillator.

"Break-In," April 1960. "Multiband Heterodyne V.f.o. for S.s.b. and A.m., Part 2." Refer to Part 1 for full details.

S.S.G.B., March 1960: "Break-in operation with Geloso Signal Shifter." Details as to how to make basic modifications to the Geloso and circuit for adding grid block time sequence keying.

"CQ," April 1960. "The G4ZU 'Bird Cage' Antenna." (Re-printed in this issue.—Ed.)

For those fluent in Spanish, Danish, Swedish and Afrikaans there is much of interest in publications from these areas. Unfortunately, translators, blonde or otherwise, cannot be provided with these magazines.

IN CONCLUSION

Council notes and information from other sources haven't been received at the time of writing this. Bad luck chaps, try again this month and I'll put something in for you.

Zone correspondents, what about it? 73, 3IZ.

P.S.—The S.w.l. Group would like receivers for use by members. Although you don't have to give away that spare 75A4, they would appreciate something of lesser pedigree. Maurice Cox is the man to receive those AR7s, HRO, etc., etc.

WESTERN ZONE

Many members of the zone were all smiles after the recent heavy rains because not only is it a good start for the season, but radiation qualities are enhanced due to the good damp earth. Plenty of wire in the air seems to be in fashion these days. Herb 3NN has extended the legs of his Channel 2 DX Rhombic to over 200 ft. with splendid results and Trev 3ATR has extended his vee beams to 320 ft. with his eye on 20 and 15 mx. Keith 3ATS, although busily cropping, is still able to work a few on 20 and 15 mx. Wait until your three-bander is in the air Keith, we won't stand a chance then. Keith 3QG, a newcomer to the ranks, is now active on 80 mx. He had no sooner erected his antenna when he had to pull it down again and shift QTH from Horsham to Murtoa.

Vic. 3AEQ is practically with us again after a long absence caused by shifting QTH plus shop renovations, not to mention a complete re-build of the rig from the v.f.o. through aerial tuning unit. Reg 3ZFD lost his multi-element (approx. 16) 2 mx beam in the last gale but is still firing signals nicely into Ballarat and Melbourne, using the old faithful five over five.

All members of the zone were saddened at the news of the recent passing of Mrs. Kinsella. Her efforts at many of the Western Zone Conventions will be well remembered and our sympathies are extended to Bill and Carmel.

MOORABBIN & DISTRICT RADIO CLUB

On Friday evening, 3rd June, we held our mid-year party, and very successful too with members and a few visitors, refreshments both liquid and solid, and good cheer was the theme throughout.

At our general meeting on Friday, 17th, Max 3ABO gave a talk on technical subjects, some projects which he has in hand at the moment, mostly transistor equipment, which were lapped up by all and sundry.

On Saturday, 18th June, a very successful card party was held at the home of Arthur 3AWO. Thanks are extended to Arthur, and especially to Mrs. Oakes for a wonderful evening. There will be more of these card parties and the hospitality is not only extended to members, but also to any Hams and their YLs or XYLs. Contact me for further details.

The club room is now in good shape, and the transmitter ready to go on the air as soon as the antennae are erected. You should be contacting 3APC shortly.

The club is in need of new members, new blood to give it that extra boost which means progress, so if any readers are interested contact me, 3LC, at BY 3918 any time of day or evening. You can be sure of some good fellowship and interesting evenings.

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QUEENSLAND

BRISBANE AND DISTRICT

This month we are pleased to note that an old member of the Division has rejoined the ranks. From relicensing in 1946 until the early fifties, it was unusual for a day to pass when the call sign 4WF was not heard on one of the bands, especially in the hunt for DX. Then

for quite a few years, pressure of other work kept Bill from the bands. He was always an active member of the Division and held positions on Council for quite a few years. Now he is active again and has come back into the W.I.A. Welcome back, Bill!

Listening to "News Review" on the A.B.C. a few weeks ago, I was surprised to hear the announcer say that they were going to have an interview with a Brisbane specialist who had found that Temperature Inversions caused Asthma sufferers to have a bout of that complaint. Yes, you have guessed it, the Doctor was Ion Morrison, 4MO, and he gave a very good explanation of a Temperature Inversion and he detailed his findings. Knowing the importance of a Temperature Inversion to DX on the v.h.f's., I think that it might be a valuable aid to the 50 Mc. boys to be able to know when they occur. I think we will investigate the possibilities of getting advice on this business.

By the time you read this, Harry 4HA will be back in Brisbane after his trip to England. It has been strange not hearing him on the bands and I know he is itching to stoke his rig up again. Harry was in London during the Royal wedding and his daughter told me that he took some colour photos of the celebrations; he was up and in position at 6 a.m. on the wedding day so that he could get the photos.

Talking about t.v.i., I'm afraid you chaps in the fringe areas will have to be very careful if you are re-building your rigs because there are a lot of pitfalls to look out for. Frank 4ZM found that he was causing t.v.i. to his own "one-eyed monster" but, fortunately, not to any of the neighbours' sets. It appeared that he would either have to stay off the air or his family would have to keep the t.v. receiver off Channel 2. Frank has his rig enclosed and couldn't seem to cure the t.v.i. with traps or any of the normal methods given in Phil Rand's book. Just by a chance, he left his v.f.o. and doublers on, but his final off, while he checked the t.v. and found that the t.v.i. was still there. Well, he finally cured it by doing away with capacitive coupling to his final and tuning his p.a. grid which he link coupled to his previous stage. The reason this case of t.v.i. is worth mentioning is that Frank wouldn't be a mile from the t.v. transmitter and yet he caused t.v.i. in a millivolt area! (Suggest you also read May "A.R."—Ed.)

You have possibly noticed that silicon diodes are being used instead of vacuum rectifiers in t.v. receivers and a little bit of calculation shows that a 240v. primary to 350v. at 700 mA. secondary transformer with a pair of OA211 diodes in a voltage doubler circuit will give you 600v. at 350 mA. out. (This will exceed the P.I.V. of those rectifiers. Two in series, then two series chains in a voltage doubler will be satisfactory.—Ed.) The use of a lot of different t.v. receiver parts will certainly reduce the size of table-top rigs and bears some investigation.

Tom 4ZBH was at the May general meeting, after being away from Brisbane for a few months on temporary duty in Rockhampton. Tom rides a motor bike and, having a couple of weeks' holiday while he was up there decided to go for a jaunt on the bike. Do you know, he rode that hot rod up to Darwin! Oh, to be young again.—73, from old 4PR.

TOWNSVILLE

Things have been very quiet during the month and because of the condition of the bands, do not have very much to report. Must hasten to correct error in my last notes. Ted 4EJ did not use the anchor chain for the fence but now busy boat building. This takes up all his spare moments and leaves a vacant space on the 14 Mc. band between the commercials for the use of others. Very happy to report that Bob 4TK is over the operation and recently heard on the air in his cheery way. Claude 4UX stole a march on the locals at the disposal sale and walked away with a number of AR88s for his pupils in the recent examinations. Charlie 4BQ having rx troubles, this time after just completing his cubicle quads.

Eddie 5OW was a recent visitor to the town; very sorry Ed I was out shopping when you called, hope you enjoyed the local meeting. Good to hear Harry 4ZP, ex Sarina, now in Cooroy, taking part in 7 Mc. W.I.A. hook-up this morning. Needs extra seconds to leave the table and dash into other room for his turn in the net. Stan 4SA, being Secretary, etc., can give quick replies when required on the Sunday hook-up. This net is a lot larger than the one on 14 Mc. for the Northern boys. Why not call in and air your grievances, if any, and help the net out. Can remember years ago that this was a very populated spot each Sunday morning.

Rex 4LR drifting around the local shacks while on a vacation, seems brighter and better than ever. The local Z boys having a lean time on 50 Mc., band condition being exceptionally bad; no JA signals when I monitor the frequencies. Skeds have been arranged for KG6AGL each night for 7 p.m. local time but so far no break through. Good to hear that the Palm Beach Convention will be held around Brisbane Show time if all goes well.

Remember the R.D. Contest this year and all you chaps who give numbers please send in logs. It not only helps your State, but also helps the Contest Committee in cross checking the ultimate winners.

As you read these notes, Belgium Congo will be 9Q. The call signs certainly change and at times I have to listen to the QTH of the chap to realise the call I have heard is not a new country.

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SOUTH AUSTRALIA

The monthly general meeting of the Division to which everybody looks up to, to wit, VK5, was held to a very representative gathering, considering the inclement weather, and a big roll-up of visitors were welcomed by the Chairman and President, Lloyd 5OK. The guest speaker for the evening was Phil ex-G3MFN, who was scheduled to speak on single sideband. Actually he split the talk up into two sections, first section devoted to an interesting description of his experiences in his recent trip to G land, where he spent three years professionally, and thus came in close contact with the principles of s.s.b. in his work, and secondly, to a solid description of s.s.b., both practical and theoretical. Arising from his talk on G land, several highlights are well worth noting:—

(1) 14 Mc. is of no use during the t.v. hours because of t.v.i. (2) 1.8 Mc. band is used with the permissable power of 10 watts. (3) 3.5 Mc. s.s.b. boys are very active and also a very "tight" group to gatecrash by a stranger. (4) Field days are really something and also most enjoyable. (5) The R.I's. Department in the U.K. are very tolerant toward "pirates" and rely to a great extent on the Amateur to frighten them off. (6) The R.S.G.B. radio hobbies exhibition last year was exceptionally good and the prices of equipment quite reasonable. (7) There is a keen t.v. Amateur group in active existence.

With respect to the second section, Phil got right down to earth, and the number of questions asked at the conclusion of the talk gave ample proof of just how good the discourse had been. It was my intention to discuss at length this part of the programme, but with its usual diabolical cunning, Council has decreed that a detailed account of the lecture will be included in the VK5 Journal, which is of course already in your hands. Need I say more, once again they have denied me my small triumph, once again they have treated me with ignore, and once again I must take it and like it, because I am not in a position to kick up a fuss without my wife and 19 children hearing the wail of the wolf at the door.

Taking myself in hand and steeling myself emotionally, I will now continue by saying that the usual vote of thanks was proposed by John 5KX and received with acclamation by all present.

If you have finished reading this summary of the meeting, although I greatly fear I am by now writing to myself (Never fear, I have to read it.—Ed.) you are probably saying to yourself, "This VK5 correspondent must keep awake at the meetings, he must be a ball of energy, a person of perspikas, perspicak, perspicas, well, anyway, he must be clued up." Well, my gentle readers, like another famous man, King Canute, I cannot tell a lie, I pinched all the above material from the notes that John 5JC used for his W.I.A. broadcast, and I thank him sincerely, and if my father was here he would thank him also. As a matter of fact I would have gone to the meeting but my XYL was a bit worried about the rain, and felt that if I got my tootsies wet, I might catch a cold in what passes for my head. One can't be too careful of a genius!!

George 5GG heard on 40 mx with a solid signal and apparently flushed with enthusiasm for that particular band. Newly arrived from the v.h.f's., he had nothing but praise for the contacts and the operators on the band. At the moment I would say that there is no hope of him returning to the v.h.f's.

Have heard a lot of comments on the air recently concerning the electronic keyer of Dave 5DS. I have not heard it myself, but if it is half as good as the comments would have us believe, it must be something out of the box. Had the pleasure of a contact with Jack 5JX during my vacation at Oakbank. His signal was as good as any on the band at the time. Bill 5EW was another one contacted whilst at Oakbank and I was quite surprised to find out that he was at Alice Springs. In all the years I have been on the air I have never worked that town before, and to think that I had to do it on vacation.

Brian 5EM, who is at Ardrossan, is putting a strong signal into Adelaide these days, and judging by reports received, he is putting in a good signal everywhere. Keith 5ZY was another station that my makeshift antenna system at Oakbank snared in. He and I were regulars on 40 mx many years ago, but over the latter years we have not come in contact much on the air. Jim 5JK is looking fit and well after his recent trip to the Western Districts of VK3. I suggested that I might mention his trip, but he said, "Don't mention my name in that rubbish that you write to the magazine." Drawing myself up to my full three foot, four and nine-eighth inches, I said haughtily, "I don't write rubbish for the magazine. I always type it." That slayed him—I think.

Doc 5MD and Cec 5BZ recently made a trip through the wilds of VK3 and VK2, including a visit to the capital city. Fancy letting these two loose on an unsuspecting Canberra, they will probably be the next two Government representatives to the I.T.U. Conference. Anyway, what would be wrong with that? No two in Australia would have a better knowledge of what is good for the Radio Amateur, and if they only did a quarter as much as they have done for the hobby in VK5, we would still be more than on the right side of the ledger.

The Divisional Picnic has come and gone, and owing to the inclement weather, it was not altogether a huge success. The practice in the past has been to hold the Picnic in the summertime, but as was to be expected, it usually was too hot for comfort, and so it was decided to try the autumn for once. The drizzly rain fell almost continuously and this deterred a large number of the regulars, but about nine cars arrived before lunch to the cheery welcome of Norm Coltman over the p.a., and the reasonable amount of shelter was put to good account. After lunch a few more cars arrived, mainly the V.h.f. Group, which, incidentally, are always well represented and as keen as mustard at all gatherings of the Division. Between showers a couple of races were contested by the children, the v.h.f. gang were busy with their gear and reported a number of contacts with the stay-at-homes in the city, and the winner was Keith 5KH with a rumoured score of five contacts. It is regretted that so many members failed to attend and it is to be hoped that our next Picnic will be better treated by both the weather and the members.

Incidentally, why does everything have to go wrong for me when I go on annual leave? Gordon 5XU handles the local daily paper notes for me and gets bigger headlines and better space than I have had for years. Comps 5EF writes the notes for the magazine in a style which I could never hope to achieve, to everybody's satisfaction, and to make matters worse, I open my big mouth and feed him with enough copy on the air to fill his two opening paragraphs. Regarding those two opening paragraphs, I have briefed Mr. Z. Offenboffer, QC-KC-BZY-XPQ and IOU, to represent me in another place. I hope after I have won the case that Doc 5MD will not let Comps use his receiver to help him through his long hours of "solitary". True as true, I do. Anyway, thanks fellows, I appreciate your co-operation, but do you have to kick me when I am down?

You possibly have heard of the traditional war horse that had the scent of battle in his nostrils long before the battle actually commenced. Well, if I did not scent something in the May magazine, under the name of Casey, in the column "Feedback," then my quivering nostrils are due for a de-soke. Anyway, what would be wrong with a Pansy covered page? It would be as good as that joke about "going on for effer, and effer and effer," much more "refrained" from my point of view. I am beginning to think that I am just a Pansy among the Onion bed!

A deal of interest was displayed in VK5 on the apparently controversial subject of "Pink Pages" for the Call Book. No comment is necessary from this end, but I always remember a one-time-boss of mine telling me that some day I would be an old man, and the only way that my secret would come out would be by my continually saying something for the sake of being heard. I am beginning to see just what he meant.

The VK5 representative on the S.A. Moonwatch Group, Gordon 5XU, made a trip to Woomera this month. The trip was something of a hush-hush nature, judging by the evasive answers given to the VK5 reporter for this magazine, but there is no truth in the rumour that Gordon has been chosen for the first man to make the trip in the satellite to the moon. This honour having been reserved by the VK5 Council for none other than me, possibly in the hope that something will go wrong in the navigation and thus remove for ever their biggest pain-in-the-neck.

Arch 5XK, the unofficial mayor of Lucindale, has been a regular correspondent of mine for some weeks now, and his letters have been filled with pungent comments on such subjects as Council, the VK5 Division in general, the VK5 Journal, and sundry other topics and persons, including myself. Whilst I don't agree with everything he says, I must admit that a good deal of what he writes concerning the country members and like topics make good sense, because nobody has had more experience with such a subject than Arch. I believe that Council intends to publish one of the letters in the next issue of the Journal, and this is all to the good, because it shows that they are an open-minded Council and anxious to do the right thing by all phases of membership. Don't forget also that a member who has the courage of his convictions to complain openly, is much better than one who sits silently at the meeting and then grizzles outside on the footpath.

The S.E. members of the VK5 Division held their usual monthly meeting this month, and it developed into an old-timers night with a discussion on the equipment used in the 20's and the 30's. Col 5CJ had taken along several copies of pre-war "A.R." and "QST," with the idea of showing the younger members just what made things tick in those days, and of course this started things doing in fine style. Claude 5CH, being the grand-daddy of the meeting, was able to delve back into the past a bit further than anyone else, and the discussion which followed proved that there is a keen interest in those days among the younger folk, and so the older members have decided to delve into their junk-box before the next meeting and bring along any such equipment to the next meeting. It has been suggested that I bring along my coherer, but as we are using it for a salt and pepper shaker these days, I had to reluctantly decline the invitation.

Claude 5CH is gradually getting the new tx completed, and having a few contacts on 7 Mc. Tom 5TW is another who is getting his share of contacts on 7 Mc. Stuart 5MS is still keeping his G skeds, but if the local paper can be taken for gospel, then his daughter Maxine has announced her engagement. Speaking from the depths of my experience, and also my pocket, I would hazard a guess that the new rx that he has been talking about is in jeopardy. Erg 5KU was missing from the last meeting. Leo 5GJ has been very busy at his vocation, but is finding time to slap some paint on the new tower, when work and the XYL permits.

Pastor Ron Holmes is the newest member of the group, and has had a busy month. His new church has been opened and it is an imposing building, complete with hearing aids, etc. Ron was feeling more than pleased with the rapt attention from his congregation who were using the hearing aids at the opening service, but was set back a few yards when he discovered that due to a faulty earth lead on the mike, they were hearing "loud and clear" the "Top 40" from the local b.c. station, to wit, 5SE!! However, despite these SS reports and tribulations, he is getting some gear together, and it should not be long before he applies for his call sign. Welcome Ron, hope to QSO you some day. Don't you listen to anybody who will tell you that I am never on, it is a libel.

Col 5CJ has been trying different types of aerial couplers in an endeavour to load up a bit better on 40 mx, and after finding a circuit in an old "A.R." which claimed to be able to load into an inch or even infinity, he gave it a go and is more than satisfied with his results on 80 and 40 mx. For the benefit of peasants such as I, Col., what was the year and month of the mag.?

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WESTERN AUSTRALIA

The monthly meeting for June was again held at Mend's St. hall and again brought the usual attendance, the feature for the evening was a lecture by Ron 6KW on a "150 Watt Table Topper." Ron brought along his own home-made rig as a demonstration and a beautiful demo. rig it was. A lot of hard and exacting work must have been put into it. Fortunately Ron was in the position at the time to obtain the good components it consisted of at a very moderate cost, but I am afraid it would cost well in excess of £100 plus many db. to make a similar rig today. Many of those present would have liked Ron to have forgotten and left it there. It is not only a nice professional looking job, but it also produces 5 x 9 signals world-wide as Ron has proved. Everybody left with a firm resolution to re-build their own rig.

The monthly Council meeting was held at the QTH of Cole 6CS (The Windsor Hotel). Unfortunately I was not able to attend these two meetings as I was away in the bush. The main topic of the evening was the amalgamation of the Radio Society and the W.I.A., which has been agreed to but there was some doubt as to whether the life members of the Radio Society would be accepted as life members of the W.I.A. 6CS was the only councillor who was against the proposal and I believe the meeting took on rather a heated argument. Then 6KW proposed to put the whole thing before the monthly meeting for a vote. Cole 6CS, our President, then put on a very nice cray fish supper, SO?, served by 6ZCS, hi!

Jack 6BU has been at it again and is now working the State on 40 milliwatts c.w., using a transistorised rig with OC16s in the final and is receiving 5 x 8 over 300 miles; good on you, Jack. 6RW is also QRP happy and is working on converting a 108 for mobile. 5CW and 6AG are going to have a QRP net with 12Bs and Clem 6CW is putting out a very nice c.w. signal. It looks as though we are heading for a QRP field day here in VK6, which I think will be very good as field days are what we want to bring the Amateurs of VK6 together.

Thanks go to Cole 6CS for sending a telegram of congratulations, on behalf of the W.I.A., to Princess Margaret and Mr. Armstrong Jones on their marriage. We hope the reply which was received will be framed and placed in the new W.I.A. building when it has been erected. When 6AG saw the letter in the mail with all the red seals on it, he was too frightened to open it, so left it for the Council meeting.

Skipper 6WS, I am glad to say, has received permission to run up to 65 watts. He has ordered a Mosley beam and should have it up very shortly. The Geloso tx he is trying to get free of customs duty, which I think should be allowed, seeing it is for personal Amateur use and also seeing that Skipper has the disability of being blind. We hope you succeed, Skipper.

Dave 6WT was heard on 40 mx on Sunday, 5th June, after a long silence on this band. Dave has just re-built his rig (a 150w. table topper, using a Geloso with an 813 in the final). He is now building a rx using the Geloso front-end. This will be a masterpiece when it is finished and will be well worth looking at, at one of the general meetings. Even now many of the VK6s are talking about it, and it's still not completed.

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TASMANIA

Our congratulations are due to Pat Geeves, President of the S.w.l. Group, for gaining his full licence. His call sign is 7UP. We hope to hear you over the air soon, Pat. Bill 7YY has been to Sydney during May to take his father there to undergo an operation. We hope everything turns out for the best, Bill. Joe 7BJ is now radiating very well on the 81 megacycle band, namely Channel 2. I understand that the monster t.v.i. has reared it ugly head in a couple of cases, so get down to it chaps and clear things up before the R.D. Contest arrives. We were all delighted to meet Foley 7CK, who dropped in to our June meeting.

The best DX I heard during May was YJ1FJ on phone, and VP8VB with ZL1AV on the key, both on 14 mega.

Our June meeting took the form of an auction of surplus equipment, and there were certainly masses of it for sale. Unfortunately, it was the day before pay day for me, hi. Charlie 7KS has been nurse, chief cook and bottle washer at his QTH this month, with his XYL and children suffering with chicken pox. We hope that all is well again Charlie, and that Lois has taken over the reins of domesticity again. Jack 7JB has his daughter Jennifer in hospital recovering after the removal of her appendix on 1st June. All is going well, I believe.

Rupe 7RM, I learn, has recently retired from the servicing job he had, which took him around the State on regular trips. I understand he has a part-time job with a t.v. outfit. It was good to hear you again on the 7 meg. band the other Sunday morning, Rupe.

With the allocation of the 20 Kc. slice from 1840 to 1860 Kc. for the use of the emergency network, the problem arises as to equipment, in view of the fact that most portable disposals equipment operates from 2 megs. only. However, it is a good thing, in my opinin, that W.I.C.E.N. has a recognised channel for operation. I have not as yet heard any activity on the channel.

NORTH WESTERN ZONE

Well here I am once again after my regretted absence from the last issue. The time is past midnight, yours truly having just arrived home from our last zone meeting and as copy for this issue must reach our worthy editor some time this day, here we sit to report. Just what will I report.

The attendance at the said meeting was down, only sixteen bods showing up. As I've asked before, chaps, please make an effort, at least for the August meeting which will be our Annual Meeting once again. Your moral support is badly needed as we have suffered severe losses to other zones in recent months and there is work started long ago to be finished.

I visited VK3 land in May; now there's a place, it rained for fifteen days out of the fourteen we were there. Anyone visiting VK3 territory, just get in touch with Ron 3OM. He knows all the back country roads and short cuts that take twice as long. Never mind, Ron, it's something to look back on. We visited and stayed a couple of days with Arthur 3AUL and his mother at Smoko. You should have seen us stoking up the tx to have a shave. Also passed the time of day with Arch 3BW, John 3AMC, Bill 3BU, Ron 3OM; found Ken 3CW absent in Fiji (one way to get DX). Had dinner and spent a very pleasant evening with George 3AHN, his XYL and family which includes John 3AAA. We also found time to look in a couple of shops, you know the type, and took the harmnics to the museum and the zoo. Now it's back to try and get the new tx going.

The new radio units for the Burnie Fire Brigade should be well on the way to completion by the time this appears in print. I think a working bee is planned for the next social meeting, chaps, so persuade a soldering iron or a pair of plyers to bring you along.

Gee! I almost forgot the most important bit of all; associate David Walden is no longer an associate. You've guessed it in one, he has his full ticket. Our congratulations David and we are looking forward to welcoming you on the bands—perhaps 20 mx for a start.

The WARBURTON FRANKI Page

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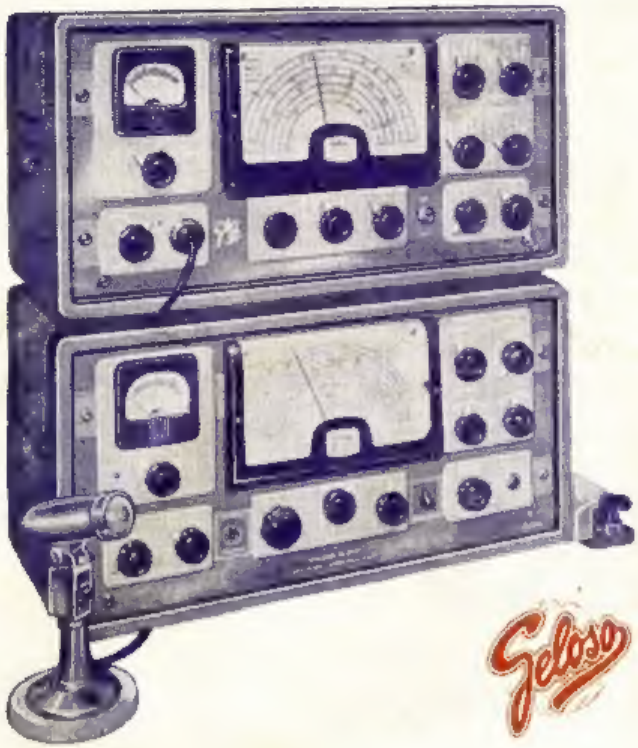

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